DAIRY FOODS RESEARCH CENTER OPENED IN NOVEMBER 22 CEREMONIES

The Southeast Dairy Foods Research Center at NCSU was officially opened Tues., Nov. 22. Spokesmen from the National Dairy Promotion and Research Board, SUDIA and other sponsoring organizations joined University officials and faculty in celebrating the opening of the regional center. Also participating were representatives of Mississippi State University. The Board last year chose the N.C.-State-Mississippi State partnership as one of six dairy foods research centers, awarding the Center $2 million in funding over five years.

Ceremonies included an 11 a.m. Opening Ceremony at the Faculty Club, a luncheon and afternoon laboratories tours at the Department of Food Science in Schaub Hall. The organizational structure of the Center includes a Director, the Operational Advisory Committee (OAC), and the Technical Advisory Committee (TAC). D.R. Lineback will serve as the Director and the chief administrative officer of the Center. The Director will work with faculty, the Technical Advisory Committee, and the Operational Advisory Committee to identify key research programs to be funded. He is also the primary liaison with the National Dairy Promotion and Research Board and other dairy, industrial and government organizations.

Objectives of the Dairy Center

The Center's primary objectives shall be as follows:
1. To conduct research to develop new and improved dairy products, and increase use and demand for current dairy products.
2. To develop, coordinate and seek funding support for multidisciplinary research programs and projects to meet its objectives and for the purpose of disseminating the results of the research to the dairy industry.
3. To develop and maintain information on dairy research being conducted nationally and to disseminate this information to the industry and researchers.
4. To strive to attract visiting scholars from other public and private universities, governmental research agencies, and from private business and industries.
5. To coordinate activities with other Dairy Centers funded by the Board to ensure that activities conducted by the Dairy Centers are efficient and cost effective.

The following project proposals have been approved for funding:
1. "Factors Regulating Texture-Forming Properties of Milk Proteins" E.A. Foegeding, NCSU.
2. "Development of Rapid Immunoassay for Bacterial Spores in Dairy Foods and Effects of Processing Parameters on Spores from Raw Milk", P.M. Foegeding, NCSU.
There is a sense of turmoil and uncertainty in the food industry. Acquisitions, mergers, and leveraged buyouts seem to occur frequently, involving both small and large organizations. RJR Nabisco, Kraft, and Pillsbury are but the most recent examples. These have ramifications, short- and long-term, throughout the industry and into academia. Budgets are cut to meet debt payments, personnel may be released, research groups may be decreased in size or eliminated. These actions can affect the availability of positions in industry, needs for food science graduates, research funding available to the university from industry, opportunities for consulting by faculty and, potentially, the training needed for future graduates to be employed by industry.

We seek to meet these challenges in a constantly changing environment. The food processing industries will continue to become more technical in orientation and their needs for graduates of food science programs are expected to increase. The Education Committee of the Institute of Food Technologists is having discussions with a group of industrial leaders to gain insights into personnel needs of the future in the food processing industry and the types of training these individuals will need. Our curricula are continuously under review by departmental committees to determine whether our courses offer what is needed and whether additional courses are necessary. As noted in the last Newsletter, we are seeking to increase undergraduate enrollment and to attract outstanding graduate students in a highly competitive environment. Four USDA National Needs Fellows have just begun their graduate studies in our department.

Scholarships have been awarded to 18 Food Science students for 1988-89. The 11 BS recipients are: Terry Cavin (Lakeview), Minda Daughtry (Smithfield), Ginger Goodman (Salisbury), C. David Hall (Raleigh), Maya Kryger (Lakeeland, FL), Leslie Stanley (Cary), Martha McLean (Wagram), Reem Siddahmed (Durham), John Roberts (Newton), Marco Meulink (Raleigh), and Charmaine Hooper (Raleigh). Students in the two-year Food Processing, Distribution and Service Curriculum awarded scholarships include: Nancy Harris (Henderson), Patricia Mayfield (Norlina), Edwin McMillan (Wikesboro), Johnny Peele (Williamston), Jane Sorrell (Raleigh), Amy Rowell (Raleigh), and Sherry Carlton (Moravian Falls).

Food Science scholarships are provided by the N.C. Dairy Products Association, the N.C. Meat Processors Association, Stouffer Foods, the Tarheel Supplymen's Association and the following endowments: Harry L. & Kathleen Barnes, Benjamin Wesley Kilgore, Mose & Helen Kiser, J. Frank & Margaret Neely, and Hese H. & Lena Maie Smith. Students also received scholarships through the College of Agriculture and Life Sciences, the National Dairy Promotion and Research Board, and through varsity sports (soccer, swimming and track). Two undergraduate and four graduate students awarded IFT Scholarships and Fellowships were included in the July Newsletter.

Fourteen students graduated with degrees in Food Science at the end of summer or fall semester. The BS recipients were Mike Chesson (Raleigh), Mike Harrell (Wake Forest), Paula Montecinos (Costa Rica), and Rex Shaver (Valdese).

MS degrees were awarded to Yun Hee Chang (Seoul, Korea), Der-Hong Shihia (Taipei, Taiwan), Penny Amato (Roswell, GA), Steven W. Bowen (Raleigh), Suzanne Case (Raleigh), Donna Franklin (Winston-Salem), and Pamela Whistler (Raleigh). In addition Robert A. Hovis (Greensboro), Linda McDonald (Winston-Salem), and JongWhan Rhim (Seoul, Korea) were awarded Ph.D. degrees in Food Science.

Food Science Club. Mike Chesson, President of the Club graduated in December. Linda Harris, the Vice President, was elected to fill the vacancy.
National Needs Fellowships

Four USDA National Needs Fellowships have been awarded to students beginning Ph.D. programs in Food Science at NCSU in Spring, 1989. Recipients are Mark Beaumont, Suzanne Case, Martha Neale and Marie Walsh. Although Beaumont and Case are originally from Pennsylvania, Beaumont received his B.S. degree in Biology and M.S. in Food Science at the University of Delaware; Case was awarded B.S. and M.S. in Food Science at NCSU. Neale’s B.S. is in Food Science at Michigan State University and her M.S. is in Meat Science at Auburn University. Both of Walsh’s degrees are in Food Science at Utah State University. These national prestige fellowships are funded at $15,000 for each of three years in order to attract the top students in the country.

New Department Faculty

Sheldon Arlene received her B.A. in Microbiology from U. of New Hampshire in 1977, a M.S. in Environmental Health from U. of Minn. in 1980, and a Ph.D. in Environmental Health, (microbiology and toxicology concentrations) from U. of Minn. in 1987.

Jonathan Allen, a native of Maine, joined our faculty on February 1 as an assistant professor with 80% teaching responsibilities. His primary responsibility will be to develop and coordinate a minor and applied research program related to a biochemical and/or physiological aspects of human nutrition. Jonathan received a B.A. from Williams College in 1974 and his Ph.D. from U. of Georgia in 1980. He did research at U. of Colorado and Dartmouth College. For the past three years, he was an assistant professor with research responsibilities in the Dept. of Dairy Science at L.S.U. in Baton Rouge. Jonathan and his wife, Pat, have three children.

Extension (D.R. Ward)

The diversity in North Carolina's food processing industry requires that Food Science extension programs respond to a wide variety of opportunities. Some recent activities are:

- A North Carolina apple cooperative recently requested assistance with methods to preserve fresh apple slices for a two- to three-week period. Dr. Frank B. Thomas, collaborating with Dr. Dan Carroll, conducted preliminary work that demonstrated that fresh apple slices could attain a shelf-life considerably longer than two to three weeks and retain excellent quality characteristics for bakery items. This work continues with a high level of interest by industry.

- Due to the nature of the seafood industry, there are often periods of product abundance followed by scarcity. During periods of abundance, supply often exceeds demand which creates a number of problems for seafood processors. In an effort to smooth out the supply curve, Dr. David Green has orchestrated a joint industry/university demonstration program to improve the quality and storage stability of fishery products through cryogenic freezing and vacuum packaging. A cryogenic tunnel freezer has been provided to a seafood processor, who in turn will freeze products from other processors who wish to evaluate this technology.

- One of the dilemmas that has faced food science is the lack of understanding, by non-food scientists as to just what the field is all about. As with most problems of this sort, education is the only real answer. In view of this, Dr. Lynn Turner has developed a series of "hands-on" experiments for 4-Hers. These experiments involve carbon dioxide production from chemical and biological materials, moisture determinations, non-enzymatic browning, and prevention of browning during drying of food products. These demonstrations are being developed for use in a leader and member manual for the "Rutie Skye Beneath My Feet" program.

- Dr. Dwain Pilkington is serving as Chairman of the Meat Industry Task Force on Methyl Bromide. Methyl bromide is used as a pest control/infestation preventative by some segments of the meat industry. The industry views the use of methyl bromide as essential. However, some federal agencies are concerned about potential abuse (overuse) of this control agent.

- Duckling processing has been limited to the presentation of whole, ready-to-cook product in the market place. In North Carolina, there has been recent interest in developing alternative products. This led Dr. Fred Feit to formulate and produce a smoke and spice flavored duck meat hot dog. A companion idea is a marinated boneless breast, which will reduce cooking time, and hopefully will increase consumption. If that occurs, duckling meat residues on the frame will encourage the production of other products such as the duckling hot dog.
Frank B. Thomas retired effective Dec. 31, 1988 after over 30 years of service to North Carolina State University. He is a native of Delaware.

Frank received his B.S. degree in horticulture from the University of Delaware, his Ph.D. from Pennsylvania State University and post-doctoral studies in food technology at Massachusetts Institute of Technology.

He joined the North Carolina State University Horticulture Department in 1958. Following the formation of the new Department of Food Science in 1961, Frank became the Seafood Extension Specialist. He was the Acting Specialist-in-Charge for Food Science Extension for the two years.

Frank has been cited for his work on several occasions. In 1971 he was named Tar Heel of the Week, in 1984 he was given the Outstanding Extension Service Award of Excellence and the Earl P. McFee Award (for excellence in fishery technology).

Special recognition was given at a retirement banquet. Frank was given a certificate of appreciation from the N.C. Dept. of Commerce, Division of Industrial Development, a plaque of appreciation from the N.C. Fisheries Assoc., and was presented a certificate of the “Order of the Longleaf Pine” by Governor James Martin’s Agri-business representative, Mr. Jim Oliver.

Frank and Connie have two children and plan to continue living at 2704 Lakeview Dr. in Raleigh.

R.E. Carawan was an invited speaker at the Air Pollution Control Association in Baltimore in Oct.; at the Food Processing and Waste Conference in Atlanta in Nov., and the conference on Waste Management and Environmental Compliance for Dairy and Food Plants in Knoxville in Sept.; served as co-chairman of the Symposium on the Future of Water Quality and its Effect on the Dairy and Food Industry in Tampa Fla. in August; was elected vice-chairman of North Carolina Chapter of Phi Tau Sigma. G.L. Calignani gave a paper at the International Symposium on the Chemical and Biological Aspects of Nutrient Availability in Norwich, United Kingdom in Nov.

E.A. Foegeding has a new project, “Factors Regulating-Texture Forming Properties of Milk Protein” from the Southeast Dairy Foods Research Center. P.M. Foegeding is the new chairman-elect of Carolina-VA I.F.T.

A.P. Hansen has a new project, "The Effect of UHT Processing, Package Materials, Ingredients, Flavorants, Oxygen and Storage on the Flavor Stability of UHT Products" from CAPPs; was honored with the outstanding leadership and appreciation award for 20 years as advisor to Full Gospel Student Fellowship and was given a teaching appreciation award from the Food Industry Research and Development Coordinating Board, Tunghai University, Taichung Taiwan; presented invitational papers at Tunghai University in July and Lahore, Pakistan in Sept.; Dr. Dinesh Arora, of India is working as a research associate with Dr. Hansen on the new CAPPs project. D.D. Hamann is hosting Dr. Chao-Tung Sun from National Kaohsiung Inst. of Marine Technology, Kaohsiung, Taiwan in a one-year sabbatical leave. H.M. Hassan gave an invitational seminar at the Department of Environmental and Community Medicine, University of Medicine and Dentistry of New Jersey in Piscataway, N.J. in Oct.

T.R. Klaenhammer gave invitational presentations at the International Symposium on Biotechnology and Food Quality at U. of Maryland in Oct. and at Wisconsin Milk Marketing Board in Madison in Sept. International visitors to this laboratory include Dr. Gerd Elisabeth Vegarud, Agricultural University of Norway, and Dr. Johanne Brendehaug Norwegian Dairies Assoc. in Nov. Dr. Colin Hill University College Cork, Cork Ireland, is new a postdoctoral research associate in Dr. Klaenhammer’s laboratory. T.C. Lainier returned from a one year study leave with Department of Scientific and Industrial Research, Fish Technology Section, Nelson, New Zealand. He collaborated on research projects at the New Zealand Research Instjt, Palmerston North, and Meat Instjt. of New Zealand, Hamilton. Dr. Lainier conducted a seminar on surimi technology for New Zealand/Australian researchers and industry technology staff, Aukland, New Zealand. D.R. Lineback visited research facilities of Givaudan in Dubendorf, Switzerland in Aug, attended the Cereal Conf. in Sydney Australia in Sept.; gave an invited

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presentation on nutrition in baked foods at the World Grain Congress, Brisbane, Australia in Oct.; chaired a session at the International Conf. on Cereal Carbohydrates in Edinburgh, Scotland in Aug.; attended Starch Round Table Conf. and AACC annual meeting in San Diego in Oct.; and spoke on new sweeteners for cookies at Biscuit and Cracker Manufacturers Assoc. in Charlotte in Oct. R.F. McFeeters was recognized by USDA-ARS with a cash award for superior performance in individual and team research leading to significant advancement in fundamental knowledge on biochemical factors associated with vegetable fermentations; was given a USDA cash award for a patent invention and promoted to GS-14 within USDA-ARS; gave an invitational presentation at the Amer. Chem Soc. meeting in Los Angeles in Sept.; Dr. Sven Lindgren, Dept of Microbiol, Swedish Univ of Agricultural Sciences, Uppsal, Sweden is on sabbatical in Dr. McFeeter's laboratory. B.W. Sheldon made invitational presentations at the Southern Poultry Extension Specialists meetings in Chattanooga, Tenn in Nov. and the Food Processing Waste Conf. in Atlanta in Oct. K.R. Swartzel has a new project, "Development of New Techniques for Thermal Process Evaluation With and Without Particulates" from CAPPs; appointed to the editorial advisory board for the J. of Food Processing Engineering; was selected to participate in the workshop on food properties and computer-aided engineering of food processing systems in Porto, Portugal in Oct. S.J. Schwartz has two new projects, one from CAPPs for research on "Aseptic Processing and Packaging of Plant Product, Chlorophyll Chemistry Affecting Color and Appearance in Vegetable Particulates"; and from the Southeast Dairy Foods Research Center on "Supercritical Fluid Technology Application to the Dairy Industry"; gave an invitational presentation at the Amer. Chem. Soc. meeting in Los Angeles in Sept.; F.R. Tarver, Jr. is president of N.C. Chapter of Phi Tau Sigma, and president of Phi Tau Sigma national; was given recognition for service to N.C. Poultry processors from the N.C. Poultry Processors Assoc. and N.C. Poultry Federation; gave invitational presentations in Wash. D.C. to USDA and Poultry Sci. Assoc. in Wash., D.C. in Aug and Sept.; is serving as a cooperator on a project funded by Southeastern Poultry and Egg Assoc. to survey Salmonella in broiler chickens. W.M. Walter, Jr. gave an invitational presentation at the National Sweet Potato Col- laborators meeting in New Orleans in Feb.; was visited by Dr. Tomanari Nagahama of Kagoshima Univ.; Kagoshima, Japan in Nov.

Best wishes from the dept. for a speedy recovery to J.L. Middleton, former University dairy plant manager and R.A. "Bo" Bullard, who was the 1983 "Meritorious Service Award" winner.

Faculty in the Spotlight

Allen and Peggy Foegeding

Our department has a unique quality probably not duplicated in any other food science department. We have husband-wife faculty members, Allen and Peggy Foegeding joined our faculty as asst. professors in 1982. Both were promoted to assoc. professors, with tenure, in 1988.

Allen's academic specialty is in muscle/ protein chemistry, while Peggy is a food microbiologist with special interests in bacterial spore physiology. Both have been acclaimed by the undergrads for their outstanding teaching.

Both Allen and Peggy did their undergraduate work at U. of Missouri and received their Ph.D. degrees from U. of Minnesota. They are both very active in their professional societies, as well as on the campus at N.C.S.U.

The Foegedings are splendid examples of how to combine active careers with family. They have a two-year-old daughter, Eva, and two dogs Greta and Kuchen, who take up their spare time. They have adjusted well to Southern living, since they appreciate country music, country ham, and grits!

The Foegedings came to us very highly recommended in 1982, and they have disappointed no one. Their dedication to research and to the advancement of our department is commendable. We salute the Foegedings!