DEPT. HEAD: "A number of problems are emerging for food science which have direct impact on our department. The problems are not unique to our department, but occur throughout departments of Food Science in the U.S. Federal research support is eroding for agriculture. Since 1966, federal funds for agricultural research have remained about the same in constant dollars, increasing only 1.6 percent between 1966 and 1981. Between 1978 and 1983, they declined eight percent."

D.R. Lineback

In 1981, 10 percent of the combined research expenditures of the USDA and state agricultural experiment stations went to postharvest technology and marketing economics research. State appropriations have helped to alleviate the problem by providing over half of the expenditures for postharvest technology research. However, state budgets are also being restricted.

Even though the U.S. consumer expects a safe, nutritious, and varied food supply at a relatively low cost, it is increasingly difficult to obtain federal research funding for postharvest technology. This forces food science faculty to increasingly depend on funding from industry. Such support is normally directed to applied problem-oriented research of a more short-range nature. While such research is important and should be done, the long-range basic research needed to provide the foundation for future applied research is undermined.

Our Department is affected in three major ways:

1. It is increasingly difficult for our faculty to secure the funding necessary to sustain their basic and applied research programs, including the support and training of graduate students.

2. Money needed for the replacement of aging scientific equipment and the purchase of new scientific equipment is critically short, to the extent of threatening the initiation, progress and accomplishment of some projects.

3. Appropriated funds for enrichment programs are never sufficient. Industry has traditionally helped us invite lecturers to enrich our teaching and research programs, support faculty travel to scientific meetings (particularly for younger faculty), and purchase equipment or supplies. This has been done through small ($1000 to $2000) unrestricted gifts. This has allowed us great flexibility in using the funds, something which is seldom possible with appropriated funds.

It is recognized that industry needs to increase its funding of research at universities, but it is unrealistic to expect it to provide the amount by which federal funding has decreased. It is also unrealistic to continually call for increased federal funding of research. However, it is realistic to advocate and request a redistribution of funding by the federal government to provide increased appropriations for research in postharvest technology. The Institute of Food Technologists has been addressing these concerns through its Committee on Research Needs and sponsored a workshop on this subject in November 1984. Testimony was presented to both the Senate and House Agricultural Committees this spring during hearings on the 1985 agricultural bill. IFT will continue its efforts to seek ways to implement priorities and suggestions made during the workshop. If this environment is to be altered, it will take the combined efforts of all with interests in maintaining our food supply."
"Food Science students excel in university and national competition. Four undergraduates and one graduate student have been named IFT scholarship/fellowship winners for 1985-86. They are: Anna Coffin and Sara McGeary, both seniors from Durham; Sally Smith, a junior from Lexington; and Sara Morrison-Howe from New York, NY.

PhD thesis presented by B. B. Baker, Institute of Agricultural Sciences, with its Intellectual Achievement Award at its spring banquet. PhD has earned a grade point average of 3.95 on 38 credits of graduate coursework.

Fifty-one students were graduated during 1984-85--14 BS, 11 MS, 8 PhD, and 8 AA degrees. The fall and summer school graduates were named in the last newsletter. The graduates receiving their diploma at the May commencement were: BS degree--Gregg Eby (Rockingham), Ruth Hamrick (Cary) and Gail Lim (native of Malaysia); MS degree--Ann Fulop Brown (Lexington), Yuma Hata-pot (native of Thailand) and Wayne Tressler (Nashville); PhD--Susan Barefoot (Cary), Kun Ho Chen (native of Taiwan), Brian Hume-Hobson (Cary), and Louise Mouser (Cary); and AA degree--Paul Avery (Durham), Sidney Hilliard (Cary), Christopher Jones (Orange, NC), Jon McIver (Booneville), Mary Norma (Greenboro), Richard Parker, Jr. (Nashville), and Barry Thompson (Glenwood). Helen Waters (Winston-Salem) will receive her degree at the end of June. Richard Parker, Jr. had the third highest grade point average of all Agricultural Institute graduates with a 3.95.

Officers elected to lead the Food Science Club for 1985-86 are: President--Anne Tieleman; Vice President--Bonnie Brewer (Raleigh); Secretary--Ruth Norton (Cary); Treasurer--Mike Jackson (Durham); Activities Co-Chairpersons--Sara McGeary and Debra Blakes (Lexington); and Historian--Sally Smith.

The leadership of the Agri-Life Council was in capable hands with Food Science senior, Ruth Hamrick as president. Ruth will continue on as a MS program.

Extension (N.C. Miller, Jr.)

"The Food science extension group has completed the first year of a new four year plan of work and the results are outstanding. For the first time the extension group has been encouraged to seek outside funding to assist in carrying out specific functions in the overall plan of work. These grants are all short term, low dollar grants that are specifically oriented. Additional support is now available for the meats, seafood, dairy, poultry and food management and waste control programs. This trend is expected to continue in the future.

The Food service manager's certification program is taking off like a space rocket. Programs have been held and managers certified. This program is a self-supporting program and is operated in conjunction with the county extension office and the county health dept. Those passing the test are certified for a period of five years and are recognized nationally through a reciprocal program with other states.

Two new microcomputers have been added to the extension office. These units are intended for use in the water management and waste control program and in the dairy and refrigerated foods extension program. A third unit is scheduled for delivery soon and will be utilized in the meats and fruit and vegetable programs. These units will help us to more efficiently serve the food industry. The total food science extension group (faculty and staff) are eagerly looking forward to even greater successes in the future than has occurred in the past. Please let us hear from you regarding your educational needs."

Proposed Center for Aseptic Processing and Packaging Studies

The most revolutionary development in food processing in the last fifty years has been the advent of continuous aseptic processing. It is rapidly replacing the tin can in the low-acid fruit drink industry. The potential for the replacement of the tin can in the low-acid, acidified and all food with particulate matter is dependent only upon research to develop the necessary technology.

The Department is acknowledged to be the academic leader for continuous aseptic processing research in the area of engineering and processing technology. There is a void in basic research in technology and processing in this area. A proposal has been prepared and permission is being sought from University administration to organize a "Center for Aseptic Processing and Packaging Studies." Due to the emphasis this new technology is receiving and its potential for great impact, we believe that this is the opportune time to establish the proposed Center. The Center will be the focus of cooperative research between faculty from different Schools in the University and with industry.
It is proposed that the Center be organized to promote the advancement of the knowledge base for the utilization of aseptic processing technology. The Center will support research activities that enhance and stimulate the development of aseptic processing and will disseminate and promote that technology through educational methods. Where appropriate, a commercial program will exist primarily to further new advances to contractors for specific research and development projects. The Center will be supported by member fees, direct and indirect support by the University, grants and contracts.

Rutger Process School Focusing on Aseptic

Our Dept., in cooperation with the Food Processors Inst. (F.P.I.) of the Nat. Food Processors Assoc., is sponsoring a program the week of Nov. 18, 1985. The first half of the program will be devoted to requirements for certification, and the remainder to specific applications and problems associated with aseptic processing and packaging. Mailings and registration is being handled by F.P.I.

Faculty and Staff Activities

Department faculty promoted in June include; H.R. Ball and D.E. Carroll to full prof. and R.P. Swartzel to assoc. prof.

Changes in Dept. personnel include the retirement of D. Hal Hill and resignation of S.D. Thomas, both located at the Seafood Lab in Morehead City. "Sam" Thomas resigned effective Jan., 1985 to enter the private sector of the N.C. Seafood Industry.

North Carolina State was the host institution for the National Association of Colleges and Teachers of Agriculture (NACTA) annual conference in June. The theme for this year's conference was Quality Education: Strategies for Success. Those participating in the program were H.B. Craig immediate past president of NACTA, T.A. Jones, and L.D. Turner. They presented the professional improvement of classroom instruction and includes participation from various two and four year colleges in the U.S. and Canada.

H.R. Ball gave an invitational seminar in the Poul. Sci. Dept., Univ. of Ga., in May; served on committee with E.R. Traver and B.K. Sheldon to host meeting in April of the Tech. Advisory Comm. for "North Central Regional Research Project on Poultry Products." C.L. Catiomani was inducted into Gamma Sigma Delta, The Honor Society of Agri. and Phi Tau Sigma, The Food Sci. Honor Society. B.K. Sheldon gave an invitational paper at the Poultry Congress in Chicago in March; received an Ag. Foundation grant entitled, "Gel Forming Properties of Turkey Muscle Proteins as the Basis for Texture and Water Holding Capacity of Turkey Meat Products." B.K. Sheldon gave an invitational seminar at the IPT Basic Symposium in Atlanta in June; member of Editorial Board of J. of Food Protection; received an Ag. Foundation Grant entitled, "Partial Replacement of Sodium Chloride by Potassium Chloride in Country Style Ham." H.R. Fleming gave invitational papers to the ABC Research Services in Fla. in Feb., and the Poultry Teachers Int. Conf. in Fla. in April. M.H. Gregory was elected for a second term as president of the N.C.S.U. Faculty Club. H.K. Hassan gave an invitational seminar at Duke Med. School in May; is listed in roster of visiting scientists for Minority Institutions Program, which is sponsored by the Fed. of Amer. Soc. for Expo. Biology. T.R. Klammer gave invitational papers to Dixie Section of IPT in April, and to Food Science & Nutrition Conf. on "Microbiological Applications in the Food Industry" at U. of Missouri; invited to join the International Dairy Federation Group of Experts Concerning Genetic Manipulations of Dairy Cultures. D.K. Larick, our newest faculty member, is currently developing a station project in the area of "Rumen Function & Its Influence on the Diet of Excessively Grazing Animals." B.K. Sheldon was elected a fellow of the Institute of Food Technologists; elected to the executive committee of the Extension Technology group of IPT. J.D. Schwartz received a NIH Biomedical Research Support Grant on "Assessment of Metaboloid Bioactivity in Processed Foods." B.W. Sheldon gave an invitational paper at the annual meeting of the North Carolina Turkey Federation in S.C.; participated in a "TV Magazine" T.V. show concerning research on watered-over flavor. H.E. Swain gave invitational papers to N.Y. Section of IPT, Monsanto in St. Louis, & A.D.S.A. annual meeting in Ill.; Harold's visitors included research scientists, W.L. Harnak, Food research Inst. In Canada, & W.D. Sherman & P. Flynn of Monsanto who studied research techniques in his laboratory. E.R. Traver gave an invitational paper at the Poultry Supervisors Shortcourse in Raleigh in March; received funding from Poultry Food Processors for a white paper concerned with energy consumption. T.M. Thomas was an invited speaker for Maryland Eastern Shore IPT, and a seminar at U. of Maryland received funding (C. Taylor - co-investigator) from Atlantic Fisheries Foundation for "Developing Consumer Information for Visually Impaired" and for "Seafood Workshops.

Department Receives Industry Grants

The Department received an unrestricted grant-in-aid of $2800 from General Mills. This was granted by the Corporate Contributions Committee upon recommendation of two employees who had visited the Department. A gift of $1000 was also received from Gerber Products Co. to be used for scholarships/fellowship recognition. This is administered from their Asheville plant and it is hoped that it will be renewed annually.
FACULTY IN THE SPOT - LIGHT

Harold E. Swisgood joined our faculty in 1964. He is a native of Ohio and received his B.S. degree in Dairy Technology at Ohio State University in Columbus and his Ph.D. in Chem. at Mich. State Univ., East Lansing. He did a one-year postdoctoral at Eastern Regional Research Laboratory in Philadelphia.

During his twenty-two years at NC State, he has been very productive in his research program, and is a world authority on milk proteins and enzymes. He has demonstrated a unique ability to combine the insights of basic science research with the creativity of an innovator. The four patents he holds are evidence of his inventiveness.

He has been on two off-campus study leaves - as visiting professor at Univ. of Lund, Sweden and as guest scientist at Nat. Inst. of Health, Bethesda Md.

Harold, who is chairman of the Dept. Graduate Studies Committee, has published over one hundred scientific papers. His fields of research specialty are; (1) fundamental protein and enzyme chemistry, (2) biotechnological applications of immobilized biochemicals, and (3) investigations of milk proteins and enzymes.

Recently, a number of honors have come his way. In 1984, he was named William Neal Reynolds Distinguished Professor of Food Sci. and Biochen. In June, 1985 he was named winner of the Dairy Research Foundation Award of the Amer. Dairy Sci. Assoc. Presently, he is serving as president of the campus chapter of Sigma Xi.

Harold's low key manner does not suggest his intensity and obsession with his work. His quiet, good-natured disposition is infectious to his friends and colleagues.

Harold and his wife, Janet, are parents of two married sons. Mark is working on his Ph.D. in Chem. at Michigan State Univ. and Ron received a B.S. in Anthropology & Sociology at UNI-Chapel Hill in May, 1985.

Food Science Salutes the Swisgoods!