



University of California
College of Agricultural and
Environmental Sciences
Department of Food Science
and Technology

December 12, 1985

Dear Alumni and Friends:

It is a pleasure once again to join with Drs. Collins, Luh, Price, Richardson and Whitaker, as well as Tim Taylor, President of the Food Tech Club, in extending once again special holiday greetings to all of you. It has been a busy year with many achievements by the faculty, staff and students, and opportunities for even greater accomplishments in the years ahead.

We are pleased to advise you that Dr. Charles Shoemaker was promoted to the Associate Professorship with tenure effective July 1, 1985. His important contributions to teaching, research and University service will continue to be important to the departmental program. We have recruited Professor Norman Haard, currently Professor of Biochemistry, Memorial University in Newfoundland, to join the faculty as Professor of Marine Food Science, sometime after January 1, 1986. He has a house to sell, a family to move, and needs to bring current research programs to an orderly conclusion before coming with us. We also have recruited Dr. Serge Rebouillat, National Polytechnic Institute of Lorraine in Nancy, France, as an Assistant Professor in Food Engineering with a joint appointment in this department and in the Department of Agricultural Engineering, and as soon as his visa application has been approved (we anticipate no difficulty), he will be joining us hopefully by the summer of 1986. We also have initiated a new search for a second Assistant Professor of Food Engineering, and we anticipate that Professor R. L. Merson, serving as Chairman of the Search Committee, and the other members of this committee, will have outstanding applications to consider, interviews arranged, and an appointment recommended and processed by the fall of 1986. These are important additions to the faculty.

Professor Walter Dunkley completed his distinguished service as a Professor in the department with mandatory retirement as of June 30, 1985, and continues his close association with us as an emeritus member of the faculty. In addition, Dr. Wade Brant, Cooperative Extension faculty colleague, will be fully retired as of December 31, 1985, and arrangements

have been made for Dr. Gideon Zeidler to join the team as of January 1, 1986. Dr. Luh will complete his outstanding career as a member of this faculty in reaching mandatory retirement as of June 30, 1986. He will continue important research studies and his close association with the departmental program after that date. Our other emeritus faculty members (Professors Robert Feeney, George Marsh, Emil Mrak, Herman Phaff, Clarence Sterling, and Reese Vaughn) are continuing on as important resource personnel. They all join in extending our special greetings, and incidentally we have made a recording of some of the early history for that part of the departmental program that originated in Berkeley, California. We also have a cassette tape of a recording made by Professor William Cruess in about 1960, in which he reflects on the early days of the program at Berkeley. Through the leadership of Professor Walter Dunkley, plans have been made to develop a recording on the early history of the dairy industry base of the departmental program here at Davis. Professor Lewis has continued as Associate Dean of Resident Instructor this year and Professor Barbara Schneeman has been appointed Associate Dean for our Subject Matter Area in the College.

Our faculty and staff also have received several awards and honors during the past year. Professor Michael Lewis received two important awards for his contributions to teaching and research in brewing science: Award of Merit, Master Brewers Association of the Americas and Elected Fellow of the Institute of Brewing (London). Professor Barbara Schneeman received the prestigious Prescott Award for Outstanding Research Achievements for a food scientist under the age of 36, and I also received the Carl R. Fellers Award for outstanding contributions to the profession at the annual meeting of the Institute of Food Technologists in June of 1985. Professor John Whitaker received the coveted Agricultural and Food Chemistry Award, which was presented to him at the annual meeting of the American Chemical Society in September of 1985.

Our staff also were recognized for their distinguished achievements: Jim Buhlert, Shirley Rexroat (Cooperative Extension), Peggy Royale and Al Wilson all received 1985 Special Performance Awards.

Three members of the faculty were on sabbatical leave during 1985 (Drs. R. L. Merson, Michael O'Mahony and Robert Price) and all made special arrangements to spend most of their sabbatical leave time writing and updating scientific material in their fields while staying in Davis. Professor David Ogrydziak is currently on sabbatical leave beginning September 1, 1985, at the Institut Nationale Agronomique in Paris, France.

You will be interested to know we also intend to devote a major effort in a review of all courses offered by our faculty and the three undergraduate majors that we administer (Food Science, Food Biochemistry, and Consumer Food Science). We anticipate initiating this review after the Campus Committee gives us a report on the seven-year review of the Food Science and Food Biochemistry majors.



Through the leadership of Dr. Tom Richardson, Peter J. Shields Endowed Chair recipient in the department, and Dr. John Bruhn, we are discussing with Dean Hess the possibility of establishing an Institute for Dairy Foods Research, which will focus research activities in this field and increase contact with dairy industry leaders in California.

Major changes in the course program that were approved in 1985 include developing a revision of FS&T 250 and 250L (Chromatographic and Electrophoretic Methods, and Chromatographic and Electrophoretic Methods Laboratory), which will be taught by Professors Gary Smith, Everett Bandman and Walter Jennings in the winter quarter of 1986. We consider this an important development in broadening the teaching of instrumentation and separation techniques for graduate students.

Under the leadership of Professors Tom Richardson, Gary Smith and Lloyd Smith, FS&T 130 (Chemistry of Milk and Dairy Products) and FS&T 119 (Principles of Dairy Processing) are being revised and combined in a new 4-credit course which will be taught as FS&T 119 in the spring quarter each year.

As you will note from the reports of the other faculty colleagues and Tim Taylor, these comments supplement the highlights that they have included. It is hard to believe, but this is the sixteenth consecutive holiday greetings message that I have sent on to you in the rapidly passing time since we came here in August of 1970!

With our special good wishes for the holiday season.

Bernie Schweigert

Since I joined the Faculty over 37 years ago, there have been changes in the way courses are gathered and labeled as majors for undergraduate students. Faculty members in Dairy Industry, the Enology group of Viticulture and Enology, and Food Technology collaborated in developing a joint Food Science major in the late 1940s and early 1950s, before there was a Food Science and Technology Department at Davis. Gradually, emphasis in teaching shifted from commodities and practices to scientific principles underlying the processing, preservation, packaging, storage, evaluation, and utilization of foods on the basis that students well grounded in chemistry, microbiology, engineering, economics, and other appropriate sciences can be readily taught how to apply the principles to specific commodities. Flexibility in the requirements of the Food Science major was maintained to permit each student to elect a number of courses according to his or her specific interests or educational goal. Simultaneously most food processing companies became multicommodity and multi-national companies. Eventually, members of the Faculty of the Department of Food Science and Technology became involved in other majors besides Food Science, including Food Biochemistry and Consumer Food Science.

Most of those students who are interested in employment in the Food Industry continue to select Food Science as their major, but the number majoring in Food Biochemistry is increasing. Currently, there are 107 majoring in Food Science, 62 in Food Biochemistry, and 14 in Consumer Food Science. Nevertheless, the specific label is not nearly as important as the quality of the contents of the package. Any good teaching program has three essential parts: knowledgeable faculty, good courses, and good students. Fortunately, the Food Science teaching program at Davis is blessed with each of these.

Seasons Greetings!

Ed Collins
Master Adviser
Food Science Major

HOLIDAY GREETINGS!

This holiday season is a special one for Betty and myself. I was invited by the International Society of Horticultural Science, Fruit and Vegetable for Processing Symposium to deliver a paper concerning Vegetable Processing. The symposium was held Nov. 17-24, 1985, at the Cape Sun Hotel, the newest and best hotel in Cape Town, South Africa. The symposium was a great success as experts from many countries came to report on their research results on fruit and vegetable culture and processing. Many of the participants are UC Davis alumni. We had a great time together seeing the fruit and vegetable canning, freezing, and dehydration industries. I met Dr. Arnold Vasser and Dr. Ben K. Nortje again after 35 years of separation. We were classmates at U.C. Berkeley in 1948-1950. How wonderful it is to see many of the former UC Davis students who are now very successful in their research, teaching or business.

South Africa is a well developed country. They have gold mining, diamond mining and a very successful fruit and vegetable processing industry. The industry is packing fruit juices by aseptic canning in brick packages made of paper-aluminum-polypropylene films. Hydrogen peroxide is widely used in sterilizing the containers. The horticultural technique in South Africa is very advanced. They use computers to control the mini-irrigation systems for the fruit trees and horticultural crops. Radiation pasteurization has been applied commercially to prolong the shelf life of strawberries, onions, potatoes and many others.

Some of you may wonder how is the Room 206 laboratory going. I can say that research work on fruit, vegetable, rice and bean processing is proceeding nicely. This quarter, we have seven people doing research on food processing. Some are working toward advanced degrees in food science, others are exchange scholars, and we have also Dr. Djoko Darmatijiti of Indonesia, and Dr. R. L. Chang of Taiwan working on extrusion of rice and chemical and physical properties of California grown rice.

We have a very active project on kiwifruit processing being carried out by Professor W. H. Wu of The People's Republic of China and on vegetable freezing studies with objectives to improve the quality of the product through controlled blanching and freezing processes. We have also four FS&T 199 students working on various aspects of food processing, such as vitamins in fruits as influenced by processing, and amylose starch in rice. Debbie Lewis, a graduate student working toward the M.S. degree in food science, is working on protease enzymes (Actinidin) in kiwifruit as a source of meat tenderizing agent.

On July 1, 1986, I will join colleagues Brant, Dunkley, Feeney, Marsh, Mrak, Phaff and Vaughn as an emeritus member of the Department. I will still have some laboratory space and office to pursue studies in food science and technology.

Betty and I visited Newark, New Jersey in March, 1985. We also went to Buffalo, N.Y. to see the Niagara Falls, and the Ontario Agricultural Experiment Station in Vineland, Canada, just across from the Niagara Falls. It was a great experience for both of us. We have a grandson, Jeffrey John who is now two years old. He kept us very busy when he visited us.

My wife Betty joins me in extending best wishes to all for a happy holiday season and success during the coming year.

Bor S. Luh

As the newest microbiologist in the department, I'm happy to wish all Food Science alumni a joyful holiday season. It was certainly unexpected when I left Davis nine years ago that I'd end up with a Cruess Hall lab opposite Herman Phaff's, where I did my thesis research on yeast systematics. Unexpected, and pleasant indeed.

My new lab has been running for a year, and with the support of the department and college, my research on gene regulation in the spore-forming bacterium *Bacillus subtilis* is going well. I've had a great deal of help starting up from postdoctoral scientist, Sharon Boylan (from Michigan by way of Jack Priess' lab in Biochemistry) and graduate students Joo Won Suh, Sue Kalman, and Marian Duncan. Susan Thomas (formerly in Irwin Segel's lab in Biochemistry) is our new technician, replacing Joanne Tredick, who left last June.

Joanne was Herman Phaff's technician for some years, and worked with me half time on DNA sequencing. Last spring, Joanne married Doug Kline -- a zoologist of all things -- and moved to Connecticut, where she now works at the University Medical Center in Farmington. We all miss Joanne's ability, humor, and unique personality in the lab, but we're happy to see her moving in interesting new directions.

I hope all of you enjoy this holiday season -- best regards from

Chet Price and Lab Residents

Holiday Greetings to all from the dairy chemistry research group in Cruess Hall. Although we have been here only one-and-one-half years, we are comfortably crowded into laboratory 232. The location brings back a bit of nostalgia and deja' vu since this was the laboratory that I worked in as a post-doctoral researcher for Al Tappel in 1959-60.

Through Bernie Schweigert's efforts I am ensconced in a new office which was built out over the front entrance foyer adjacent to the Filper Room. I have a great view of the campus to the north. I hope that being thus perched over the lobby does not distract me too much.

It would be appropriate at this point to introduce my research group. Perhaps you will know some of them. Even though we are one of the newest research groups in the Department, we have rapidly expanded to a critical mass of six graduate students and two undergraduate technicians. Undergrads Lydia Mead and "Ronnie" Wong are working on a rapid analysis for casein in fluid milk. Bong Soo Noh, Sang Oh and Young Kang (the Korean contingent) are at various stages in their Ph.D. programs. Young came with me from the University of Wisconsin to finish his research in Davis. He should be graduating from U.W. this spring. Bong Soo is preparing radiolabelled milk proteins to be used as tracers in studying thermally-induced interactions in milk systems. Young Kang and Sang Oh are part of a cloning team that includes Rafael Jiminez-Flores (Mexico via Cornell) and Tracy Christopherson (USA via University of Wisconsin) working on their Ph.D. and M.S. degrees, respectively. Bernie Schweigert wants us to clone several John Whitakers to increase the productivity of the Department, but we are restricting ourselves to bovine caseins. This brings me to Peter Lee (Taiwan) who is using enzymes to destroy antibiotics in milk. Peter may be my first UCD graduate, probably with an M.S. degree this spring.

All of us, along with my wife, Maxine, wish you a happy holiday season and a successful New Year.

Tom Richardson

Holiday greetings from the laboratory group noted for "**Making Enzymes Work**," or is it the other way around, as noted by one of my current graduate students! The year 1985 has been a very busy one for all of us, especially those in my laboratory who have attempted to find me while I completed my assignment as Chair of the Department of Biochemistry and Biophysics (June 30, 1985), spent three months as a Fulbright-Fellow at the University of Sao Paulo, Brazil, and then two weeks later left for three weeks in The People's Republic of China as leader for an applied enzymology delegation. I'm home to stay for awhile, honestly.

Dr. Jean-Marc Chobert from the National Institute of Agronomical Research, Nantes, France and Dr. Mahmoud Sitohy, Zagazig University, Egypt completed their year as visiting scientists in the laboratory and returned home in August. They are working hard to complete the writing of their research on the improvement of proteins via phosphorylation, essential amino acid incorporation and limited specific proteolysis of proteins. Dr. Mooha Lee, from the Korea Advanced Institute of Science and Technology, Seoul, spent October and November in the laboratory working on the chemical modification of food proteins. Dr. Varda Kahn, Volcani Center, Israel, arrived November 19

and will be here until December 27 working on our joint project on controlling polyphenol oxidase activity. Dr. Jong Kun Ahn, Korea Agricultural University, Seoul, arrived on November 30 and will be in the laboratory until September 20, 1986. He is selecting among several projects. Dr. Makoto Abe, who took his Ph.D. degree with our good friend and collaborator, Professor Soichi Arai of Tokyo University, will join the laboratory on April 1, 1986 to work on sulfhydryl protease inhibitors in corn. At least three other visiting scientists have tentatively asked to join the laboratory in 1986.

Miang Lim is now completing the work for her Ph.D. degree under Professor David Reid's guidance. Miang really did an outstanding job on studying the enzymes in green peas, green beans, cauliflower and broccoli responsible for off-flavor (aroma) development in blanched, frozen vegetables. The frozen food industry has been most supportive and impressed by this work. Patricia Velasco will complete her Ph.D. thesis in Biochemistry on nitrate reductase in Chlorella and barley by the end of the Winter Quarter 1986 and return to her faculty position in Mexico. Geracimo Bracho should complete his thesis on invertases and invertase inhibitors in white potatoes by either the Winter or Spring Quarter 1986. Mr. Chao Wu, from The People's Republic of China, has just completed his M.S. degree with Dr. B.S. Luh and will join the laboratory on January 1, and we anticipate about two other students later in the year.

During the year we were pleased to see Dr. Andi Chen (Taiwan), Dr. Valdemiro Sgarbieri (Brazil), Dr. Tom Wong (Gallo Winery), Dr. Don Williams (Western Washington University), and Dr. Donald Kramer (University of Alaska) who received their degrees from the laboratory.

David Osuga, Virginia DuBow and Clara Robison continue to be the glue that holds the laboratory and the rest of us together. We are most pleased to have their fine help.

Professor David Reid and I continue to teach FS&T 202, **Chemical and Physical Changes in Food Systems**, each year. In 1985 there were 17 students. I continue to teach Biochemistry 123 and 123L, **Introduction to Enzymology**, and give 4-5 lectures in FS&T 100A, **Introduction to Food Chemistry**.

A Merry Christmas and a Happy New Year to each of you. Please drop by to see us.

John Whitaker

Greetings from the Food Technology Club. This has been a year of searching for that combination of activities and events that would help to unite the students with that feeling of belonging, as well as learning what an academic organization should offer.

Two years ago the club was changed so that the officers are now elected at the end of winter quarter. This is to allow the new and old officers to work together during the spring.

During spring quarter the club worked at the usual events, Western Food Industries Conference and Picnic Day, along with having a field trip to learn about cheese manufacturing in the Petaluma area. (Yes, as long as we passed through the Sonoma area we had to check on wine production as well.) We also tried something new to add a more formal close to the school year, a banquet. The theme was a Luau, set in the Cruess Hall courtyard. The Polynesian meal was topped by a talk from Dr. Thomas Richardson and entertainment by the Food Science Hawaiian Dancers. It was an enjoyable evening to reflect on the year that had passed and visit among the Faculty, Staff and Students who had attended.

Spring was topped off with our annual migration to the National IFT meeting. This year the club, with a grant from the NCIFT, helped sponsor twelve students to Atlanta.

For the fall and winter quarters we are working on producing a series of programs that will increase the involvement and interaction of Undergraduates, Graduates, Faculty and Staff. We recently had a program on internships and our next meeting will feature a marketing representative from IBM to discuss the integration of personal computers into the laboratory for data acquisition and manipulation, and report writing. The NCIFT representatives are busily preparing for the NCIFT Banquet put on by the club each year in January. Last year we had more than three hundred participants, and we expect the same again this year.

I have been extremely fortunate to be aided by an outstanding group of officers: Mary Bills, Vice-President; Lucinda Styne, Treasurer; Vicki Otto, Secretary; Jo Ellen Wayne and Karen Wilkens, NCIFT representatives; Dave French and Joan Rosen, Graduate Student Representatives. Drs. Gary Smith and Thomas Richardson have been our advisors, and their interest and guidance has truly helped the club this year.

We, the students, have been truly blessed to have a department and an industry that are so concerned and helpful to us. I hope your coming year is as blessed as we have been this year.

Tim Taylor, President
Food Tech Club

