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College of Agriculture and
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January 6, 1988

Dear Alumni and Friends:

If I had set out to choose a significant year for Food Science and Technology, I would probably not have chosen 1987, at least not before it started. It was not the beginning of a century or a millennium or even a decade. It was not the 25th anniversary of the Department or 100th anniversary of the University. It was not even a round number! Yet two events in 1987 will have a lasting impact on the history of the Department. Chancellor Emeritus Emil Mrak died on April 9th, and Professor Schweigert stepped down from the Chairmanship after more than seventeen years of distinguished service.

It is probably impossible to describe the impact of these two great men on the development of Food Science and Technology in the U.S. and in the world, (and equally unwise to lump these two pioneers together in one paragraph). Suffice it to say here that Dr. Mrak did not forsake the Department even as he forged a new general campus at Davis for the University of California and served as its first chancellor; his policies, foresight and vision still are the undergirding of our campus today, eighteen years after he retired. And where Dr. Mrak left off when he "retired" from the campus in 1969, Dr. Schweigert picked up in the Department in 1970. He is rightly proud of the accomplishments of "his" faculty, students and staff, many of whom he recruited, all of whom he encouraged and promoted. We will miss his leadership in the front office, but I suspect his "promotion to professor" in the Department will find him even more active from the "side" office!

I must confess that I did not prepare properly throughout the year to bring you all the news of the outstanding achievements of all of our outstanding faculty, staff and students. The reason that I am writing at all in this space is that Alta Schweigert died on November 29th and Professor Schweigert still wanted you to hear from the Department on time as usual.

One honor of significant importance, recently announced: Rose Marie Pangborn has been chosen an Alumna of the Century by her Alma Mater, New Mexico State University in Las Cruces; I think that is like a century plant that doesn't bloom very often and is a singular achievement. Other significant events: Paul Singh was chosen Outstanding Educator by the American Society of Agriculture Engineers. Graduate student Tim Taylor is serving as National Chairman of the Student Division of IFT. Barbara Schneeman has been chosen as Chairman of the Nutrition Department starting January 1, 1988. Professors John Whitaker, Bernie Schweigert, Bor Luh, Norm

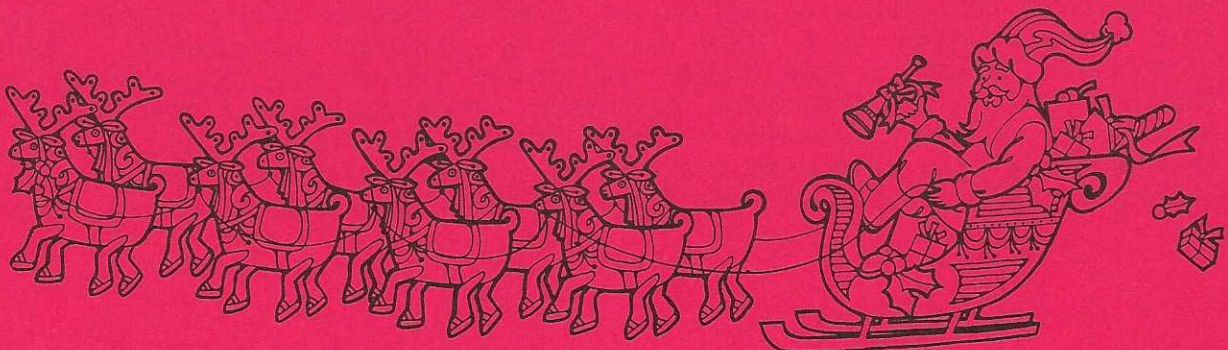
Haard, Paul Singh and student Miang Lim attended the IUFOST meeting in Singapore in October; after that convention John was also able to carve out some time away from his duties as Associate Dean in the College to lead a team of Food Scientists on a technical tour of China. John Bruhn spent part of a sabbatical in Australia. Chemistry Annex is not the same, with the retirement of Lloyd Smith on June 30th and the addition of Dr. Bruce German; Bruce will teach and do research in the area of lipid chemistry. (You can see with so many important events happening at once why I selected to report them randomly, like a multimedia light show!) Ed Collins completed a phased retirement program and is doing well, a little consulting on the side. Dr. Schweigert was honored May 13, 1987 at a Food Science and Nutrition Symposium at the Faculty Club. Dr. Tom Richardson has been appointed Coordinator of the newly established California Dairy Foods Research Center, which is a joint program with Cal Poly, San Luis Obispo. Bob Pearl received the California League of Food Processors' Distinguished Service Award. Just a week ago Mendel Mazelis underwent heart by-pass surgery; fortunately he is recovering well, a different kind of accomplishment for which we are grateful. Carol Cooper, Virginia DuBow, Dave Osuga, Clara Robison and Dan Watts received University Special Performance Awards. Peggy Royale and Virginia DuBow received Staff Assembly Citations of Excellence.

I hope I didn't leave out too many accomplishments. If I did I'll just have to write to you again next year. Oh yes, one of my sons finished college and was married and my wife, Donna, finished a Master's degree program in Special Education at a competing university; those are important, to me at least!

So in spite of the fact that 1987 started out as an undistinguished number, it was quite a year. As near as I can tell, 1987 is a prime number. At least it was a prime year. In the following pages Ericka Barrett, Bob Pearl, Al Tappel, Norm Haard and the Food Tech Club President, Ruth Yost send their diverse greetings, reflecting the diversity of gifts in our Department, a diversity that adds to the richness of our lives at Davis.

All of us, and especially Dr. Schweigert, wish that you all, our former students and friends, be richly blessed during the holiday season and throughout 1988! It is good to know, during the good times and hard times, that our worth is not determined by what we do or accomplish, but by who we are and who we are called to be by our Creator. Emil Mrak and Alta Schweigert know one form of that calling. Dr. Schweigert knows another. We want you to know by means of this letter, limited though it is, that we care about you. Let us hear from you. Rich blessings!

Larry Merson



Happy holidays from the hallowed halls of Cruess to all of you out there in the wide wide world. It's hard to believe that another year has gone by. I used to think of myself as one of the newer faculty around these parts, but that's certainly not the case any more. I bet that many of you are likewise surprised when you realize how long it has been since you were here. Perhaps our community letter will help you to feel closer to us again.

Probably the most important event of the year for all of us was the planning for the changing of the guard. It is a time to be happy and sad all at once. We are happy to be welcoming Professor Merson as our new chairman-elect; at the same time we are saying a sad good-bye to the times of Chairman Schweigert. Now we will be getting to know Professor Schweigert as a fellow colleague who can pursue his many interests in Food Science without having to spend so much time hearing about all our problems. In his words, "These are exciting times!"

This year I will be taking over FST 104 (Food Microbiology lecture) which was taught by Professor Collins until his recent retirement. I have had a chance to practice it a bit by teaching it in the summer session, but the big winter quarter class will certainly be a challenge. We seem to be running a little low on microbiologists these days due to the retirements of Professor Collins and Professor Phaff and the phased retirement recently initiated by Professor Miller. Hopefully the shortage will be remedied in the not-too-distant future.

As always, my lab is full of graduate students. At the last count there were two Food Science MS students and three Microbiology PhD students, all working, more or less harmoniously, on the same project, namely the regulation of anaerobic growth in Salmonella typhimurium. The food scientists working in microbiology are Nina Heinzinger, who seems to find time for everything including active participation in the Food Tech Club as well as long hours in the laboratory, and Rick Bradford who not only knows Food Science, but also seems to know everything about every animal or plant in the world that you might happen to mention. The microbiologists working in Food Science are Chin-Lin Wang, who keeps everyone in good spirits with her boundless cheerfulness and enthusiasm, Cheng-Jin Huang, the mad scientist who reads everything, tries everything, and is racing at top speed through the program, and Jane Tang, who patiently tries to keep everyone else in line. This year I have decided to join the new-wave scientists and initiate a DNA cloning project to help answer some of our questions about the growth of Salmonella. I spent the better part of a six-month sabbatical reading about molecular genetics and recombinant DNA techniques (just like a student cramming for an exam). It isn't easy to keep up in any scientific field!

As Chairman of the Food Science Graduate Group, I'm meeting and getting to know many more students these days. You'll be happy to know that the graduate group is alive and well and may be expecting (a PhD program, not a baby). If all goes well, we may be able to give you a due date next year at this time.

Jim Buhlert (my husband) is still very busy managing the computers in Cruess Hall. He says he learns more about the computer every day, but it feels like what he needs to learn grows at an even greater rate. Every now and then he gets a break from the computer and has an opportunity to do a little of what he came here to do in 1967 - food chemistry. This year he worked on sugar analysis in raisins with Professor Miller. Jim and I both enjoy working in the laboratory and feel a little nostalgic about the good old days at the bench.

Jim and I also have a busy schedule at home. We have launched three of our four daughters into college and are now wondering how we can go on taking care of all the pets they have left behind with us. The rabbits are easy, but the cats, dogs, and parakeets seem always to need attention. But perhaps it is appropriate that Food Scientists live on a farm. Happy new year from the Buhlert-Barrett farm!



Ericka Barrett



Season's Greetings from the Cooperative Extension group in Food Science and Technology: Extension Specialists, John Bruhn, Bob Pearl, Bob Price, George York and Gideon Zeidler; Staff Research Associates, Kathryn Boor and Pam Tom; Secretaries, Sharen Chaffin and Emily Ohrwall; Program Assistants, Shirley Rexroat and Ann Sandoval and Specialist Emeritus, Wade Brant.

Bob Pearl assisted in the honoring of Bernard Schweigert at a very successful Schweigert Symposium held in May. A manual edited by Ann Scheuring was the outcome of an informative New Product Development Study Group. Bob continues to be extremely active in programs involving fruit and vegetable processing as well as development of short courses and workshops for the food processing industry.

Ann Sandoval, among other activities, has kept herself busy learning new ways to use our CompuPro. As usual, she has continued the smooth-flow of programs she and Bob conduct for the fruit/vegetable processing industry.

Bob Price and Pam Tom continue to conduct adaptive research and educational programs for the seafood industry. A current major project involves determining the effect of on-board handling and chilling methods on the quality and shelf life of albacore tuna. Information from this project will be used to develop guidelines on albacore handling for commercial fishermen and seafood processors. As a member of the Institute of Food

Technologists Continuing Education Committee, Bob is helping organize a short course on Seafood Technology to be held during the 1988 IFT Annual Meeting.

Emily Ohrwall, Secretary to Bob Price and Pamela Tom since September of '85, will transfer to the Center for Consumer Research on January 11, 1988, where she will be Secretary to the Consumer Food Marketing Specialist, Christine Bruhn.

George York, Extension Food Technologist specializing in food plant sanitation and food microbiology, continues to be busier than ever. The current tremendous public interest in food safety is really keeping George and his staff hopping! He is currently involved with an Agricultural Issues workgroup focusing on chemicals in the food supply. He taught a large portion of the Food Microbiology Short Course offered by the Food Science Extension Unit in conjunction with the Food Science Department. The Master Food Preserver program, a volunteer program on food safety and preservation administered by Cooperative Extension, continues to grow, with well over 1,000 trained volunteers in the state of California.

Kathryn Boor, Staff Research Associate, coordinated the 1987 Food Microbiology Short Course, and the Northern and Southern California Food Processor's Sanitation Workshops. She is currently revising the Master Food Preserver Manual to include a larger food safety component. She has had an especially busy year--her son, Paul Andrew, arrived in June!

Sharen Chaffin, Secretary, continues to ably keep our programs running smoothly. She is also expanding her horizons by "moonlighting" in the world of fashion--along with her University responsibilities, she has taken a retail position at Gottschalk's. Stop by and say "hello" when you're at the Woodland Mall!

Deborah Gwaltney, Clerk/Typist, has been assisting us for over a year in putting together all of our new programs. She did an excellent job in putting things together for the Food Microbiology Short Course manual, as well as the newly revised Master Food Preserver manual.

Gina Charetter our work/study student, continues to cheerfully assist in taking care of many details for our food sanitation and safety programs.

Wade Brant reports he is enjoying his "retirement," but we are all concerned about his knowledge of the definition of "retirement," as he can still be seen in the Halls of Cruess on a regular basis. Actually, we hope his retirement will continue to include 150A Cruess Hall for a long time to come.

John Bruhn enjoyed (professionally and personally) a six month sabbatical during the past year, a few months of which were spent in Australia. He is back at work and immersed in problems relating to vitamin additions to milk and is keeping very busy with work on conferences and short courses.

His second year with the University has found Gideon Zeidler keeping busy establishing contacts with the Red Meat, Poultry and Egg Processors of the State. In addition, he too has been busy with seminar and short course development.

Shirley Rexroat, Program Assistant to Bruhn, Brant and Zeidler, has kept the typewriter in high gear keeping up with the activities of these three gentlemen. In addition to upcoming conferences and workshops scheduled for 1988, she is looking forward to a second grandchild in April.

In closing, we want to add our best wishes to Bernie Schweigert. He has provided outstanding leadership to our department for seventeen years. We wish him well in his continuing role with us as Professor of Food Science and Technology.



Bob Pearl



We are saddened by the death of Alta Schweigert who was always a resourceful and dedicated friend to the department.

Peace to all of you this holiday season.

The department continues its active teaching program. FS&T 201 entitled "Food Chemistry and Biochemistry" is being taught by Dieter Gruenwedel, Richard Bernhard, and myself. The content includes: proteins, enzymes, lipids, lipid peroxidation, vitamins, carbohydrates, minerals, pigments and flavor constituents. Every other year I have been teaching half of FS&T 103, "Physical and Chemical Methods for Food Analysis". This course with many students and labs is a large effort. Gary Smith teaches half every other year and Dieter Gruenwedel teaches half every other year. I have the valuable help of Cora Morgan and three Teaching Assistants. The topics we cover are: visible and ultra-violet spectroscopy, infrared spectra, atomic absorbance, color, fluorescence, analytical analyses using enzymes, pH measurement, ion-selective electrometric measurements, radiochemical techniques and finally automated analysis.

In research my laboratory associates have about half of our work on oxidant stimulated lipid peroxidation and other biochemical damage, as modeled with tissue slices. We are producing a simulation program using Lotus 1-2-3 spreadsheet. The computerized program can integrate the effects of many more factors in lipid peroxidation than can usually be handled in experiments. My

very competent associates in the field of lipid peroxidation are Cora Morgan, Dr. Billy Fraga from Argentina, Dr. Brian Leibovitz and Ardelle Tappel. We are also working with about half of our effort on functions of selenoproteins and interactions of gold drugs and selenium. Three students are among my able associates in this research, Baltazar Gomez, Paul Motchnik, and Albertus Viljoen from S. Africa. Also working in this area are Dr. Miao Hu and Cora. In both my departmental courses and research I have the dedicated and skillful help of Clara Robison of our Chemistry Annex Office.

Best wishes to you in 1988.



Al Tappel



Season's greetings from the Institute of Marine Resources Laboratory where we attempt to continue the outstanding tradition of "fishy business" started by Professors Harold Olcott, Duane Brown and their students and associates. I have established friendships and acquaintances with some department alumni from past years and hope to come to know more of you in the future.

The family, wife Vicky, daughter Elizabeth (20), sons Ted (16) and Dan (8) and I have all adapted reasonably well to the striking transition from the land of moose trails and icebergs in Newfoundland to that of freeways and sunshine in California. While transplanting professional and family life from one country to another can be disquieting it has nevertheless been an exciting and challenging time of vocational renewal.

Teaching activities have included FST 122 (Marine Food Science) with Dave Ogrydziak and FST 202 (Chemistry & Physical Changes in Processed Foods) with David Reid. As well, I hope to establish a research and graduate education program based on the application of chemistry and biochemistry to understanding piscatorial matters including seafood quality and storage life, by-products from fish processing wastes and the interface between aquaculture and food science. Bob Fridley, the new Director for the Aquaculture and Fisheries Program at UCD, is providing leadership in coordinating about 40 faculty from sundry disciplines and we anticipate continued excellence and growth in this program.

IMR alumni of the future, currently at my side, include graduate students Andrew Long (University of Wisconsin), Erin Chou (Fu Jen University, Taiwan) and Jon Bell (UCD) all of whom are immersed in the M.Sc. program for Food

Science and Technology. Andrew started in January, 1987, and is investigating factors which influence the deposition of dietary xanthophyll pigments in the skin and flesh of cultured rainbow trout. In nature, carotenoids are often associated with protein, and Andrew is testing the thesis that dietary astaxanthin, in the form of carotenoprotein, has a different metabolic fate, hence impact, on edible quality attributes of the fish, than it does as free pigment. Erin started in June, 1987, and is interested in understanding factors which contribute to the flesh softening of rockfish (Sebastes). Erin has observed that live bleeding at the time of harvest decreases texture softening, and she is earnestly attempting to explore the thesis that endogenous collagenolytic activity contributes to this phenomenon. Jon started in September, 1987, having returned home after a few years in Senegal as a Peace Corps volunteer working with Tilapia culture. With the disappearance of the California tuna canning industry, there is need to better understand the handling and storage requirements for tuna destined to fresh or frozen markets. Tuna is a remarkable fish in that it differs from most other seafoods in being very durable. At this time there is no generally accepted chemical method which accurately defines canned tuna quality. Jon, working with Bob Price and me, will develop a hypothesis for tuna quality definition based on the biochemical transformations in the postmortem flesh.

As we celebrate the birth of Jesus this Christmas, my family and I extend our best wishes to you that we all share in the joy of God's extraordinary gift.



Norm Haard



"Swing your partner round and round..." That's right, the Club broke tradition last Spring and hosted our first Country Hoedown for the Spring Banquet. Once again we all enjoyed Tim Taylor's hand marinated chicken, and then danced with the aid of the Cal Aggie Square-Dancers. Good job with those "allemande lefts" Dr. Haard.

Speaking of Dr. Haard, he is our new Club Advisor; our Senior Advisor is Dr. Mazelis. We have had very strong student turnouts at our meetings this year, many thanks to Harjanto Halim for the wonderful publicity posters.

Fall Quarter the Club sponsored a Roundtable Discussion where five industry members defined the areas of QC, R&D etc. and gave us some advice about graduate school and the food industry. We are encouraging the social aspect of our Club through a ski week-end early next January. The Food Tech Club is also planning to implement a point system where members earn points

for the hours they spend organizing and carrying out various projects and events. Based on the tallies at the end of the year, students will receive money from the Club to attend the IFT meeting in New Orleans.

Of course none of this would be possible without the help of our current officers: Drew Long, Vice-President; Jeff Ward, Treasurer; Melissa Mantong, Secretary; Nina Heinzinger and Suanne Klahorst, NCIFT Representatives; Ernie Perez and Denise Taylor, Graduate Student Representatives; and Harjanto Halim, Publicity Chair.

All of us in the Food Tech Club thank each and every one of you (faculty, staff and industry members alike) for your continuing and always visible support.

Enjoy your Holidays and we'll see you next year!

Ruth Yost
FOOD TECH CLUB PRESIDENT

