

Department of Food Science

June 2002



NEWS OF FORMER STUDENTS AND RESEARCHERS

MICHELLE SCHAACK MALONE, after 13 years with Degussa (formerly SKW Biosystems/Sanofi) is a Research Manager for Schreiber Foods in Green Bay, WI..

GEORGE A. BAUMEISTER is retired and lives in Orlando, Florida...

MARTIN A. FREDRICK, after graduation, worked in ice cream manufacturing for 5 years and then joined Aid Association for Lutherans (an insurance company); after 30 years with the company, he retired in 1991 and lives in Wheeling, IL...

ALVIN SCHUETZ is retired and lives in Janesville, WI and has done volunteer work on dairy projects in Bosnia, Uzbekistan, Turkmenistan, Romania, and Kosovo...

PETE J. MAGNINO is retired and now does consulting work and teaches a nutrition course at Lakeland Community College which is near where he lives in Concord, OH...

JERRY MIDDLETON, formerly with Olympia Cheese Company, is now vice president of research and development (technical services) at Canadian Inovatech, Inc. in Abbotsford, British Columbia, Jerry continues to live in Olympia, WA...

MAHMOUD BUZZI, after completing work for the Ph.D. degree, returned to Libya where initially he was with the University of Nasser which lacked facilities for teaching and research so he left and joined Fituri Food where he has been about 7 years developing dairy products and starter cultures...

HABIB OLLAH FARAJI, since January 2000, has been with Avalon, Inc., Bedford Park, IL where he is a chemist in the R & D department...

DANA WISEMAN completed his training in culinary arts and is a chef at a country club near Appleton, WI; his goal is to eventually do culinary product development...

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Food Science Newsletter

INTRODUCTION

It is time, once again, to visit with you via the Food Science Departmental Newsletter. Our new chairman, Bill Wendorff, shares his thoughts in our opening brief article. This is followed by reports on extension, the dairy plant, award recipients, faculty activities, the Center for Dairy Research, the Aquaculture Program, and the Food Research Institute. News of former students and researchers also is included. Finally, we again include a brief questionnaire and hope you will complete and return it so we can use the information you provide in the next newsletter.

The newsletter was organized by Elmer Marth and Yvonne Bushland. The attractive copy you are reading was prepared in the departmental office by Suzanne Smith.

MESSAGE FROM THE CHAIRMAN

Greetings from the Department of Food Science at the University of Wisconsin-Madison. Major changes have taken place this past year at Babcock Hall and many alumni will be interested in those changes. In the June 2001 Newsletter, Jim Steele indicated he was resigning as Chairman of the Department to return to a more active role in his research program. Since July 2001, we have initiated our 5-year transitional plan entitled, "Design for the Future". Some significant changes will take place over the next 5 years that will alter the character of the department, but they will also be defining our program for the future.

My first month as Chairman was a rather exciting one, in July we celebrated Dr. Bob Bradley's retirement with a gala industry reception, we welcomed Dr. Scott Rankin from the University of Maryland as the new Extension Food Processing Specialist, we had the grand opening of our newly remodeled Dairy Store, and our Food Science Club's Product Development team took first place at the national IFT meeting. As the year progressed, we saw the promotion of Dr. Mark Etzel to Professor and Doug Hyslop, Monica Theis and Bill Klein were granted 2-year rolling horizons which gives them a bit of job security.

Some of our "Design for the Future" is starting to take place this year. Barbara Kamp, our office supervisor, retired on February 15th after 24 years in the departmental office. We are currently evaluating the structure of the support staff that we will need in the future as we start to fill her and other positions. With four critical faculty positions possibly opening in the next 5 years, we will be defining where our primary focuses will be in the future to aid us in determining future hires for our program. Our Curriculum Committee is currently designing a new option for our students in the area of Food Biosciences. With the talents that some of our younger faculty have in biotechnology, this is an area that we will be building for the future. To help develop these new programs and help sustain the strength we have in traditional programs, we will need

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CHADWICK S. LANGE is president of Festal Farms Company in Owatonna, MN; Festal Farms supplies raw vegetable products to Chiquita Processed Foods...

MICHAEL DOYLE has been named a highly cited researcher in the agricultural sciences by the Institute for Scientific Information.

MARGARET HALPINDOHNALAK has been promoted to assistant director for nutrition at Abbott International in Abbott Park, IL; her new duties will focus on nutritional quality of products and on clinical research requirements...

AMAN WIRAKARTAKUSUMAH is now rector (equivalent to chancellor) of the Agricultural University in Bogor, Indonesia; recently he was elected a member of the Indonesia Academy of Science...

JOSEPH FRANK is editor of the 17th edition of *Standard Methods for The Examination of Dairy Products* which will be published soon by the American Public Health Association; he also is an editor of the *Journal of Food Protection*...

JIM JAVENKOSKI completed work for the Ph.D. degree in Food Science at the University of Illinois--Urbana-Champaign and is now a project manager at the National Restaurant Educational Foundation in Chicago, IL...

RAKESH SINGH, formerly at Purdue University, is now Professor and Head of the Department of Food Science and Technology at the University of Georgia-Athens; he also is an editor of *Lebensmittel Wissenschaft und Technologie* published by Academic Press...

AHMED YOUSEF is scheduled for promotion to professor of food microbiology at the Ohio State University...

ROBERT BRACKETT has been appointed as director of food safety in the FDA's Center for Food Safety and Applied Nutrition; in this position, Brackett will provide leadership for FDA's food safety work, overseeing all aspects of food safety across the broad range of FDA's responsibilities in that area...

LEYDA PONCE DE LEON, formerly at the University of Puerto Rico, now teaches at San Diego State University in Imperial Valley, CA and also at the Universidad de Baja California in Mexicali, Mexico...

RAE DAWN RIPCHEN, currently a Food Science graduate student, recently

to establish some new sources of funding for our programs. With cuts we are taking with the current state budget deficit and declining sources of funding for applied research, we will be initiating a 2-year educational initiative this summer to help establish additional scholarships and assistantships for students and help fund an upgrade to our pilot plant facilities for our teaching laboratories. You will be seeing more on this initiative from the UW Foundation and the Food Science Department in the near future.



We want to extend an invitation to all of you to stop in and visit the Department to see some of the exciting things going on in Babcock Hall and to see our new Dairy Store. We appreciate your continued support of the Department and look forward to visiting with you this next year. *On Wisconsin!*

William L. Wendorff

NEWS FROM EXTENSION

This past year Dr. Scott Rankin joined our faculty as an Extension Food Processing Specialist with expertise in dairy foods and flavor chemistry, and he is already making frontpage news. The March 29, 2002 issue of *The Capital Times*, Madison's afternoon newspaper, contained a frontpage feature story on Scott's new short course offered March 25-28, Premium Ice Cream Project. Twelve gourmet ice cream makers converged on Babcock Hall to try their hand at making gourmet ice cream and sharing ideas for getting started in the premium ice cream business. We welcome Scott to the Extension team.

Other Extension Specialists have also been making news with the quality and quantity of their programming. Steve Ingham, along with Meat Extension Specialist Dennis Buege, is continuing to offer programs for Wisconsin meat processors and state inspectors in HACCP, process validation, and preventing *Listeria monocytogenes* contamination of meat and poultry products. Other ongoing efforts include

HACCP training for juice processors, training in HACCP plan evaluation for state and local retail food inspectors, and problem-solving research for organic vegetable growers.

Bill Wendorff, in addition to his new duties as Department Chairman, continued to coordinate the extensive dairy short course program in the Department- reaching between 750 and 800 students with the 25 continuing education courses offered in 2001. And Barbara Ingham received nearly \$600,000 in federal funds for development and piloting of computer-based food safety lessons for high-risk audiences. This 3-year project will lead to development of a food safety educational tool appropriate for use in the Food Stamp Nutrition Education program (FSNEP) nationwide. The Extension Specialists in the Department appreciate the continued support of colleagues, alumni, and friends in our outreach education efforts.

Barbara Ingham

BABCOCK HALL DAIRY PLANT

If you have not yet visited the new Dairy Store in Babcock Hall, you can see an image of it on our web site at: <http://www.wisc.edu/foodsci/store/>. On July 31 of last year there was a grand opening and dedication ceremony when John and Donna Hansen were honored for their generous gift that made the renovation possible. Over 300 dairy industry friends, alumni and campus staff attended the ribbon cutting. Professor Emeritus Joachim von Elbe served as master of ceremonies. He worked closely with the Department, the UW Foundation and the architects on the design and funding of the project. Alice in Dairyland reminded visitors of the importance of the Department of Food Science and the Dairy Plant to Wisconsin's food industry. The event featured an ice cream social with complimentary ice cream. Guests appreciated the cool treat and chilled spring water with temperatures hovering around 90 degrees.

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This year the Dairy Plant will install a new milk packaging machine. The 16-year-old gable-top filling machine will be replaced with a system for packaging milk in plastic containers. The new equipment, along with the pasteurizer upgrade completed last year, will better enhance our ability to expose students to the latest technology in dairy processing.

Don't forget to visit the dairy store web page to see what flavors of ice cream are offered and to order cheese boxes. Cheese boxes can be shipped anywhere within the United States and make great gifts for your friends and other UW alumni.

Tom Blattner

BRADLEY RECIEVES HONORS

Emeritus Professor Robert Bradley received the President's Award at the 2001 annual meeting of the Wisconsin Dairy Products Association (WDPA). The award recognizes Bradley for his many contributions to the Wisconsin dairy industry and to WDPA. In addition to organizing and teaching short courses for the dairy industry, Bob also assisted WDPA with its cheese and butter evaluation clinics.

Dr. Bradley also has been named a fellow of the American Dairy Science Association. This award recognizes the long-term excellence of Bradley's contributions to the dairy industry through teaching, research, and public service (extension). Other Fellows of ADSA in Food Science include Elmer Marth and Norman Olson.

MARK JOHNSON RECEIVES RESEARCH AWARD

Dr. Mark Johnson, a senior scientist in the Center for Dairy Research, recently received the Chancellor's Award for excellence in research. This is one of seven awards given annually to UW academic staff. Johnson is a world-renowned expert in chemistry and microbiology of cheese. In addition to his research, Mark works closely with the cheese industry to solve problems. He also has given numerous invited presentations both nationally and internationally. Dr. Johnson collaborates with the Department of Food Science through teaching in regular and short courses.

MARTH AND OLSON NAMED HIGHLY CITED RESEARCHERS

Elmer H. Marth, emeritus professor of food science, bacteriology, and food microbiology and toxicology and Norman F. Olson, emeritus professor of food science, recently were named highly cited researchers, worldwide, in the agricultural sciences during the last two decades. This honor was bestowed on them by the Institute for Scientific Information (ISI), Philadelphia, publisher of *Current Contents*. The ISI, through use of its immense data base, has identified 112 highly cited researchers (including Olson and Marth), worldwide, in the agricultural sciences for the period of 1981 through 1999. According to the ISI, frequency of citation is a key measure of the influence of a researcher on science and technology. The citation data became a statistically powerful resource for finding individual authors who have formed or changed the course of research in a subject. Dr. Olson's research was primarily in dairy chemistry/technology with an emphasis on cheese, whereas Dr. Marth's research was in food/dairy microbiology with an emphasis on food borne illness. A complete list of highly cited researchers in the agricultural sciences, limited biographical information for some, and the publication record since 1981 for all can be found at www.isihighlycited.com.

FACULTY/STAFF NOTES

RUSTY BISHOP was appointed as chairman of the U.S. National Committee of the International Dairy Federation . . . **DARYL LUND** was an invited speaker at the 6th Karlsruhe Nutrition Symposium, October 21-23, 2001, at the Federal Research Center for Nutrition in Karlsruhe, Germany; in April 2002 he spent several weeks at the Agricultural University in Bogor Indonesia to help develop plans for the future; Daryl also has been appointed as scientific editor of the Critical Reviews and Hypothesis section of the *Journal of Food Science* . . . **NORMAN OLSON** and **ELMER MARTH** are included in "2000 Outstanding Intellectuals of the 21st Century" by the International Biographical Centre, Cambridge, England . . . **MARY MENNES** currently is serving as president of the UW Retirement Association; she also is secretary of the Wisconsin Section of Epsilon Sigma Phi, a professional extension organization; Mary has taken on major responsibilities in the Madison West Kiwanis and is serving as lieutenant governor of Division 4--Dane and Green County Section of Wisconsin Kiwanis . . . **BARBARA KAMP**, who was in charge of the departmental office for 24 years, retired in February, 2002 . . . **MARY WAGNER**, a former faculty member, is now the chief technology officer for E. and J. Gallo Winery in Modesto, CA.

received a graduate student scholarship from the Wisconsin Section of the Institute of Food Technologists...

NORAINI KHALID is in charge of the food processing research program at the Malaysian Agricultural Research and Development Institute in Kuala Lumpur, Malaysia...

NORMAH AHAMAD is with the food science and biotechnology program at the same institute...

KHEM SHAHANI, age 78, died on July 6, 2001 while on a speaking tour in Sicily. After earning B.S. and M.S. degrees at the University of Bombay, Khem came to UW-Madison where he received the Ph.D. degree. After brief stops at the University of Illinois and Ohio State University, in 1957 Shahani went to the University of Nebraska where he remained for the rest of his career. Much of his research involved lactic acid bacteria and their enzymes. He advocated the use of these bacteria as probiotics long before this became fashionable and even before the term was coined.

NEWS FROM THE FOOD RESEARCH INSTITUTE

Meetings: Our 2001 Annual Meeting was held in May. The meeting brings together scientists from government, universities, and industry to discuss current food safety issues. In addition to summaries of food safety research being conducted at FRI, the 2001 meeting included sessions on mycotoxins and food safety and on the problem of antibiotic resistance in bacteria. Lessons learned from dealing with some prominent issues, such as genetically modified organisms, transmissible spongiform encephalopathies, and *Listeria* in ready-to-eat foods, were discussed. The 2002 FRI Meeting (May 29-30) will feature presentations on bioterrorism food security, BSE, genetically modified plants food safety, and some foodborne parasites and bacteria.

Awards: Dr. Eric Johnson was appointed as an editor for *Appl. Environ. Microbiol.* Kathy Glass was elected Executive Board Secretary for the International Association for Food Protection (formerly IAMFES). Eileen Somers received the 2001 CALS Academic Staff Award for excellence in research.

Research: Our mainstay research on important foodborne bacterial pathogens, biofilm formation, mycotoxins, and the anticarcinogen, conjugated linoleic acid, continues in earnest. Dr. Bush continues work on foodborne allergens. In addition, with the recent threats of bioterrorism, Eric Johnson has been involved with a CDC planning committee meeting on bioterrorism. Reviews of research on the heat resistance and virulence characteristics of *Listeria monocytogenes* and on alternatives to antibiotic use for growth promotion in animal husbandry have been written and are available on our website.

Personnel Changes: Dr. Frank Denes has joined FRI as a courtesy joint appointment with the Biological Systems Engineering Department. He has been collaborating with Dr. Amy Wong in devising materials which resist development of biofilms.

Web Site: <http://www.wisc.edu/fri/>

Ellin Doyle

NEWS FROM THE AQUACULTURE PROGRAM

The Aquaculture Program's laboratory at the Water Science and Engineering Laboratory has been a bustling place this year, and currently one graduate student and 3 undergraduate students and are involved with projects there. Luciene Lima is studying effects of temperature and stress on growth of surubim, a large, very fast-growing Amazonian catfish. Yuliana is investigating the effects of reproductive development on physiological stress responses of coho salmon and rainbow trout. Food Science major Rob Evert of Lodi, Wisconsin and Zoology major Emily Touchett of Long Lake, Wisconsin, are investigating the regulation of cortisol metabolism in salmonid fishes. All three undergraduates are working under the guidance of Dr. Terence Barry.

Perhaps the hottest topic in aquaculture in the US has become the interaction of aquaculture and the environment. In response to this interest, the UW-Madison Aquaculture Program is currently involved in three funded projects in this area.

First, in a project funded by the National Sea Grant Program, Director Jeff Malison has taken the lead in developing a "Best Management Practices (BMP) Manual for Wisconsin and the Great Lakes Region". The BMP will serve as a tool for farmers and regulatory agencies to help aquaculture develop in the most environmentally sustainable manner.

Second, research specialist Jim Held has begun work on a project assessing the impact of the water discharge from aquaculture facilities on the receiving waterways. The main focus of the study is to use the Hilsenhoff Biotic Index (HBI), a technique developed by UW Entomologist William Hilsenhoff, to evaluate the biotic "health" of stream sites. The HBI is a measure of organic and nutrient pollution based on the tolerance of a variety of species of arthropods to various water quality parameters.

Third, both Jeff and Jim are working with the USDA Forest Products Laboratory to develop wood fiber filters for trapping solids from the waste stream of pond and flow-through aquaculture systems. The used filters should be biodegradable and useful as a source of soil conditioners and fertilizers for field or horticulture crops.

The Wisconsin Aquaculture Association's 2002 conference was held in Eau Claire, March 15th and 16th. Addresses by DNR Secretary Darrell Bazzell and DATCP Secretary James Harsdorf were well received by a crowd of over 300 interested aquaculturists. Jeff Malison and Jim Held gave presentations on some of the current projects being conducted by the Aquaculture Program.

Jeff Malison, Terry Barry and Jim Held

NEWS FROM THE CENTER FOR DAIRY RESEARCH

Dr. Karen Smith, CDR Whey Applications Programs presented "Manufacturing considerations during processing of whey into functional dairy ingredients" at the Third Symposium on Advances in Dairy Products Technology — Concentrated and Dried Dairy Ingredients in Shell Beach, CA

The December 2000 issue of the *Journal of Agricultural and Resource Economics*, Vol. 25, p. 636 – 652 included an original article by Dr. Brian Gould, senior scientist, at CDR. The article title is "The Decision of When to Buy a Frequently Purchased Good: A Multi-Period Probit Model". Contributing to the article was Diansheng Dong. Brian coordinates the Economics/Marketing applications program for the Center.

Marianne Smukowski, Dairy Safety Applications Coordinator, CDR wrote chapter 15 on dairy for "The Quality Auditor's HACCP Handbook." Published by the Food, Drug, and Cosmetic Division of the American Society for Quality, this book focuses on needs of auditors and those preparing for the CQA-HACCP exam. It provides an overview of the history of HACCP as a product safety system and the preliminary steps to creating a HACCP team.

Karen Paulus became a member of the National Association of Science Writers (NASW). NASW is the nation's oldest (1934) organization devoted to writers of science, technology or medicine. To be eligible for membership in NASW, evidence of your science writing is submitted in the form of at least five clips or other material. In addition, two members of NASW sponsor the applicant. Karen is the editor for the CDR.

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The Wisconsin Cheese Makers Association and the Wisconsin Center for Dairy Research hosted the nation's largest cheese industry seminar, the Wisconsin Cheese Industry Conference, April 2001. More than 950 dairy industry representatives gathered at KI Convention Center in Green Bay, Wisconsin for comprehensive business and technology seminars, a tabletop mini-expo featuring more than 100 exhibits and special events for the 2001 United States Championship Cheese Contest.

ADSA Presentations: Cheese:

Controlling the coagulation properties of high solids cheesemilks that are standardized with cold ultrafiltration retentates. **S. Govindasamy-Lucey**^{*1}, **J. J. Jaeggi**¹, **M. E. Johnson**¹, **J. A. Lucey**², ¹Wisconsin Center for Dairy Research, University of Wisconsin, Madison, Wisconsin, ²Department of Food Science, University of Wisconsin, Madison, Wisconsin.

Relationship between chemical, physical and sensory properties for pasta filata and stirred curd LMPS Mozzarella cheese. **C. M. Chen**^{*}, **A. L. Dikkeboom**, **M. E. Johnson**, and **M. Zimbric**, Wisconsin Center for Dairy Research.

Standardization of cheesemilks using cold ultrafiltration retentates for the manufacture of Parmesan cheese. **J. J. Jaeggi**^{*1}, **A. L. Dikkeboom**¹, **S. Govindasamy-Lucey**¹, **M. E. Johnson**¹ and **J. A. Lucey**², ¹Wisconsin Center for Dairy Research and ²Department of Food Science, University of Wisconsin - Madison.

A symposium on "Dairy Ingredients: Past, present and future" was held during the Institute of Food Technologists 2001 annual meeting in New Orleans, Louisiana. CDR Whey Applications researchers Kimberlee Burrington and Karen Smith made presentations during the symposium

Marianne Smukowski, CDR's Dairy Safety Applications Coordinator, was the lead butter judge for 2001 Collegiate Dairy Products Evaluation Contest. She has been a butter judge since 1990 and took over as lead butter judge in 1995.

Mark E. Johnson, senior scientist, Wisconsin Center for Dairy Research is the recipient of the 2002 Chancellor's Excellence in Research award.

Mary Thompson

Questionnaire

Name _____

Home Address _____

Employer and address _____

Degree(s) earned at U.W. and year(s) _____

Information for future Newsletter _____

Return questionnaire to:

Dr. Elmer H. Marth, Department of Food Science
University of Wisconsin, 1605 Linden Drive
Madison, WI 53706

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