

NOTES FROM THE CHAIR

Greetings from the Food Science and Technology Department at UC Davis! Much has happened since our last newsletter, most of it good. With this issue of Food Notes, we'll keep you properly up to date with our news as it happens.

Enrollment has been increasing greatly of late. Approximately 130 undergraduate students are majoring in Food Science and Technology. Another 40 graduate students are working towards their M.S. and Ph.D. degrees. Recent IFT data shows that the need for food scientists will increase greatly over the next 10 years. We are doing our part to meet that need.

I have recently taken over the chair assignment. Prof. Charles Shoemaker led the department for the past 10 years. Along with the change in the Chair position, we have also recently hired a new staff manager to take the place of the recently-retired Teri Wolcott. I want to take this opportunity to thank both Charlie Shoemaker and Teri Wolcott for their dedicated service to the University

and especially to this department. In turn, please welcome our new staff manager, Karen Gurley, an exciting addition who comes with masses of experience on the campus.

These are exciting times for us. A large gift from Robert Mondavi made it possible to establish the Robert Mondavi Institute for Wine and Food Science, of which we are a founding member. This center will be housed in new academic buildings along with our department and the Department of Viticulture and Enology. Groundbreaking for the new buildings happened last summer. We are looking forward to the opening in Summer 2008. Unfortunately the building is devoid of the pilot facilities that are essential for us to maintain Institute of Food Technologists accreditation. A wonderful gift from Anheuser-Busch started the dream of the brewery and food processing facility, but we still need to raise a great deal more funds. We will be dependent on the support of our friends in the coming months if we are to fulfill our vision for the future.



Chair Charles W. Bamforth

I cannot express to you how excited I am about the future of this department. While sustaining the excellent reputation that has developed in the five decades since the first faculty arrived from Berkeley, I am confident that the future will see wonderful opportunities and exciting challenges for us. We will not alter our course to maintain our status as one of the best food science departments in the world.

There is work to be done, and we are actively engaged in activities that will establish us as the undisputed number one. As always, we need and appreciate your support. I hope you enjoy reading the newsletter and will give us your input.

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CALENDAR OF EVENTS

Pre-Picnic Day Barbecue.....	April 21
Picnic Day.....	April 22
Culinary Combat.....	May 6
Graduate Student Commencement.....	June 15
Undergraduate Commencement.....	June 18

The University of California does not discriminate in any of its policies, procedures or practices. The University is an affirmative action/equal opportunity employer.

PICNIC DAY

Mark your calendars for Picnic Day - April 22.

The Pre-Picnic Day Barbeque happens April 21. See page 8 for more details.

Don't miss "Play with Your Food," the exciting float that will be entered into this year's parade by our students. According to float organizers Jaime Rudolf and Kit Meyers, the float will consist of children and adults dressed as different types of fruits and

vegetables as well as several "mad scientists."

Don't forget to stop by Cruess Hall to see posters, state-of-the-art brewing equipment, and several different experiment stations. And of course, stop by to enjoy the famous Food Science and Technology department ice cream!

Our very own Carl Winter will be giving a musical performance to educate folks about food safety from

1-2 pm in 198 Young Hall. For more information on his performance and all the other activities, check out: <http://picnicday.ucdavis.edu/>



*Picnic Day '05 Ice Cream Students and Staff
From left to right: Ayako Toma, Clara Robison, Maria Salazar, Sachi Iida*

CULINARY AND FOOD SCIENCE - A DAY IN THE LIFE

This story was written by Diana Lee (BS'03) and Tiffany Swan (BS'03) when they were at the Culinary Institute of America at Greystone.



Diana Lee and Tiffany Swan

Everyone in this program is required to have a Food Science, Hotel and Restaurant Management, or Nutrition Degree.

In our classes, we have been learning about plate presentation, flavor profiles, and wine and food pairing, as well as many other topics. But first, we learned the basics, such as stocks and sauces, knife skills, and styles of cooking.

On the first day of class, we all introduced ourselves and described our backgrounds and why we chose to enroll in the class. We were really sur-

prised to hear that we were the ONLY food science students there. Everyone else earned Hotel and Restaurant Management degrees and have goals of opening or running their own restaurant. Neither of us wants to own a restaurant, let alone be a chef; we both have goals of working in research and development in a food-processing environment. We are at the CIA to expand our knowledge of food.

Each day, we find ourselves using our degrees in many ways. Both chefs and students ask us technical questions, often referring to us as "the experts." As we sit in lecture, listening to a discussion on the Maillard Reaction, the chef-instructor pauses and glances our way, waiting for a confirming nod. After asking a technical question about the type of pectin used in a candy, Tiffany got the response, "Oh, you Food Scientists are all the same!"

We feel we have a deeper understanding about the foods that we are making. In our patisserie class, our chef-instructor showed a video about meringue and the emulsion

that makes it stable. While most of the students were confused, we understood what the video was describing because Dr. Dungan explained emulsions so well. While we both have firm grasps on sensory after taking both of Dr. Guinard's classes, Diana had a deeper understanding from her participation in the caviar study last year.

Since this is culinary school, we are learning a lot about the art of food. As Dr. Shoemaker once said, "we are putting the food back in food science." This program is definitely a compliment to our degrees. We would like to thank all of our professors for instilling in us such usable knowledge.

Post Script: Tiffany is now working on energy bars at PowerBar. She works on the product development team on everything from carbohydrate chemistry to balancing flavors and textures. Diana is working for Firmenich, a flavor company on the East coast. She works on applications and flavor chemistry using her skills from both aspects of the food industry. Diana is also pursuing her MS Degree at Rutgers University in Food Science and has worked in kitchens in New York City.

CHINA ADVENTURE

In November 2005, a delegation of students and faculty from UC Davis made a trip to China for the 6th International Conference on Food Science and Technology in Guangzhou. The conference provided an excellent opportunity for the students from UC Davis to not only learn about academic research in China but also to experience Chinese culture in both Hong Kong and on the mainland. The students who went were Jaime Rudolf, Kit Meyers, Kelly Albin, Marco Garcia, Michelle Danyluk, Ben Johnson, Laryssa Wochok, and Sammy Yu. Faculty who made the trip were Alyson Mitchell, Charlie Shoemaker, Sharon Shoemaker, and Linda Harris. The Chancellor of UC Davis also attended a few of the functions.

Our trip started in Hong Kong where Cheryl Mak (BS'05) acted as our translator and tour guide. Our stay in Hong Kong included trips to the Chinese Walk of Fame and Giant Buddha and ended with a Chancellor's Alumni Reception where Martin Yan of



Yan Can Cook gave us his secret recipe for keeping his hair black and shiny.

After Hong Kong, we headed to Guangzhou for the conference. The conference organizers set up special student sessions where both Chinese and American students presented their research. Much of the focus on the Chinese side was on the relationship between food and health, and the work was performed on top-of-the-line instrumentation owned by the

university and shared by student researchers. All of the presenters received awards after the session and every American student received the "Most Popular" award.

After speaking with the Chinese students in Guangzhou, we learned that funding opportunities for students are very limited. Unlike in the US, most graduate students in food science must pay their own tuition. Many of the students have ambitions to pursue MS or PhD degrees in the US but must save for over a year to pay for the entrance exam fee. So as a way to thank the Chinese students for being such gracious hosts, the Food Science Graduate Student Association decided to pay the GRE fee for one Chinese student each year. Hopefully, this new tradition will help strengthen the ties between Chinese and American research.

Travel, in part, was made possible by funding from the California Institute of Food and Agricultural Research.



Lower left, Martin Yan joins Food Science students and faculty with some of the Chinese hosts. Upper right, UCD students with their awards.

RMI UPDATE

In 2008, the FST Department will leave the aging Cruess Hall for new facilities just off I-80 on the south edge of campus. The new neighborhood will include academic buildings for Food Science and Technology and Viticulture and Enology as well as the administrative offices for the Robert Mondavi Institute for Wine and Food Science (RMI). There will be a dedicated sensory center, the Anheuser-Busch Brewing and Food Science Laboratory, and a teaching and research winery.

The new Anheuser-Busch Brewing and Food Science Laboratory will give future generations of students access to state-of-the-art food processing and brewing equipment to enhance their education. Construction has already begun on the academic buildings and the sensory center which were funded through a public-

private partnership. Fundraising continues for the Laboratory and the winery which will be entirely privately funded.



Martin Yan teaches Charlie Bamforth to cook

The Robert Mondavi Institute has been quite active under the leadership of Executive Director Clare Hasler. Recent public events have included lectureships by RMI Honorary Board members Martin Yan, Fritz Maytag, and Agustin Huneeus.

An upcoming RMI activity includes "From Farfel to Falafel: Food, Wine and Jewish Culture" a conference co-sponsored by the UC Davis Program in Jewish Studies. For more information about RMI activities, go to <http://rmi.ucdavis.edu>.

The RMI has also established three centers, two of which are based in the Department of Food Science and Technology. Dr. Diane Barrett is the lead scientist for the Center for Fruit and Vegetable Quality, and Dr. John Krochta is the lead scientist for the Center for Advanced Materials, Methods and Processes, both of which received seed funding from the RMI.

BOB MARQUARDT RETIRES

Bob Marquardt, Pilot Plant Manager, may be retiring this June, but his impact upon the Food Science and Technology Department will be felt in the years to come.

Marquardt joined the department in 2001 following a 35-year career in the food processing industry that included stints at FMC, Foremost Dairies, the National Food Processing Association, and even his own company. His challenge was to revitalize a relatively dormant pilot plant and to maintain and expand food processing teaching, research, and outreach activities conducted by the department and the UC Davis College of Agricultural and Environmental Sciences (CAES). His successful efforts resulted in his receipt of a CAES Achievement Award in 2004.

While he will not be accompanying the rest of the department into the Robert Mondavi Institute of Wine and Food Science, he has been active in the planning for the Food Processing Laboratory in the new building. His vision is to develop a more flexible processing facility using smaller and more portable equipment that will allow the department to more easily adapt to changes in technology and research needs. He also envisions expansion of short courses tailored to the food industry and more hands-on teaching opportunities for undergraduate and graduate students. "For students, there's nothing like the thrill of operating the equipment themselves,"



Bob Marquardt in the Pilot Plant

he says, adding that the smaller and more portable units will also be less intimidating for the students to use.

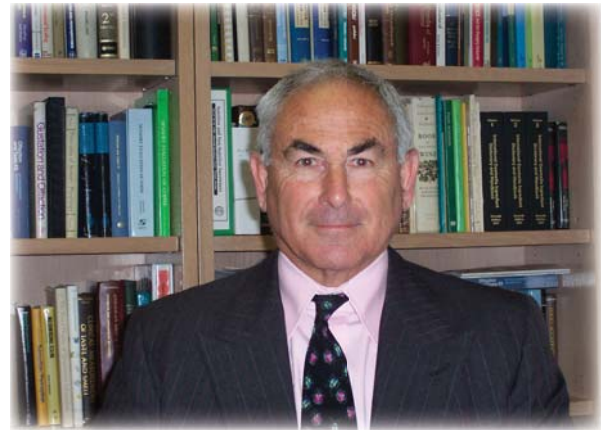
Marquardt hopes to spend some of his retirement time working in his woodshop, playing with his grandchildren, and perhaps chasing a dimpled white ball around golf courses.

LEADERSHIP BOARD

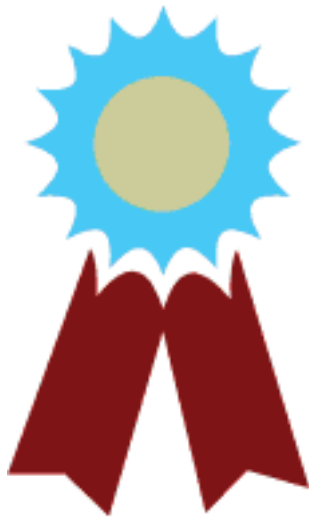
A volunteer board of alumni and friends of the Department of Food Science and Technology gives strategic advice to Department Chair Charlie Bamforth and helps guide the fundraising efforts for the campaign to build the Anheuser-Busch Brewing and Food Science Laboratory. Herb Stone graciously agreed to be Chair of the Board, and Doug Muhleman has agreed to be Vice-Chair.

Current board members are:

- Herbert Stone, President, Tragon Corporation
- Doug Muhleman, Group Vice President, Brewing Operations and Technology, Anheuser-Busch Inc.
- Wayne Bartholomew, Managing Partner, Bartholomew Associates
- Mike Bianco, Vice President – Plant Operations, Jelly Belly Candy Company
- Larry Lee, Chairman, Liway International
- Ken McCorkle, Senior Vice President and Manager, Agricultural Industries Department, Wells Fargo Bank
- William Perry, President and Co-CEO, GFF Inc.
- Zach Wochok, CEO, PGP International



Leadership Board Chair Herbert Stone



HONORS AND AWARDS

■ Pamela Tom is this year's recipient of the IFT Cal Willey Achievement Award to be presented at the IFT annual meeting in Orlando in June. Last year the International Association of Fish Inspectors also presented her the technologist of the biennium award.

■ David Reid has been selected as a Fellow of the International Academy of Food Science and Technology. His induction will occur at the 13th World Food Congress in Nantes, France, in September 2006.

■ Gerry Russell's course FST 10 was selected by students as the Best GE course at UCD in a tie with Nutrition 10 taught by Liz Applegate. Charlie Bamforth's FST 3 was voted #3.

■ An article by Diane Barrett, Alyson Mitchell, Danny Asami, and Yun-Jeong Hong was announced to be the most-accessed article for the Journal of Agricultural and Food Chemistry in 2005. The title of the article is, "Comparison of the Total Phenolic and Ascorbic Acid Content of Freeze-Dried and Air-Dried Marionberry, Strawberry, and Corn Grown Using Conventional, Organic, and Sustainable Agricultural Practices."

■ Steve and Carol Cooper were named co-recipients of The Clara Award - a departmental outstanding citizen award.

2005/06 STUDENT RECOGNITION

The Department thanks the following scholarship sponsors and congratulates the winners:

- Emil M. Mrak Memorial Scholarship: Ariel Aljadeff, Lisa Altick, Suwimon Ariyaprakai, Justine Gunawan, Thansuda Mekarooniydhaya
- California League of Food Processors Scholarship: Lisa Altick
- Chaîne des Rôtisseurs Foundation Scholarship: Lisa Altick, Taylor Davis, Kristina Downey, Lyle Farrell, Marco Garcia, Jon Hutchinson, Louisa Hays, Benjamin Johnson, Winston Lee, Jessica Morton, Christina Ng, Brad Olson, Megumi Takahashi, Jaime Rudolf, Patrick Noonan, Aaron Tanz, Sammy Yu
- Howard and Ida Vaughn Scholarship: Lisa Altick
- George Stewart Memorial Award: Allison Aubin, Amanpreet Brar, Taylor Davis, Ann Dragich, Lyle Farrell, Shirin Jamshidi, Valerie Mercier, Brad Olson, Jeremy Roza, Janna Smith, Omar Niode
- Henry A. Jastro Scholarship: Erin Basel, Brian Chan, Ashley Choy, Hailey Eiser, Tyson Lau, Sara Main, Andrea Manners, Anne Taylor
- IFT Freshman Scholarship: Erin Basel
- Robert K. Malcolm Scholarship: Brian Chan, Ching-Han Chang, Daisy Chen, Ashley Choy, Raymond Ing, Janine Karelsind, Monica La O, Zofia Melton
- Luther and Marie Davis Scholarship: Jenny Cheung
- American Society for Microbiology 2005 Summer Institute: Michelle Danyluk
- IFT Graduate Fellowship: Michelle Danyluk
- Sherman Leonard Memorial Award: Michelle Danyluk, Jessica Morton, Luis Perez, Tipawan Thongsook
- TIC Gums Scholarship: Taylor Davis
- Bor Luh Memorial Scholarship: Jerome Diaz, Lyle Farrell, Maria Gonzalez
- B.S. and Alta Schweigert Scholarship: Ann Dragich, Laura Gillies, Janice Hsiao, Kit Meyers, Winny Tanojo, Patrick Noonan, Omar Niode
- William & Marie Cruess Memorial Scholarship/ NCIFT: Lyle Farrell, Ferlinda Kowara, Patrick Noonan
- American Society of Brewing Chemists Brian Williams Foundation Scholarship: Marco Garcia
- Master Brewer's Association of America Student Scholarship: Marco Garcia
- California Cheese and Butter Association: Louisa Hays, Jun Kim
- Gail & Ruth Oliver Scholarship: Cole Hemingway, Cindy Miguita
- Rose Drake Award: Cole Hemingway, Jacob Mogelson
- Thomas A. Nickerson Memorial Award: Veronica Hernandez
- Frozen Food Industry Memorial Scholarship: Brian Kim
- George Marsh Memorial Award: Ferlinda Kowara
- IFT Junior/Senior Scholarship: Ferlinda Kowara
- Warden Prize: Ferlinda Kowara
- Thomas Nickerson Memorial Award: Winston Lee, Daniel Lin
- Alice Bridge Memorial Scholarship: Mabel Liu, Sammy Yu
- California League of Food Processors Scholarship: Brain Macapinlac, Carol Mitchell, Patrick Noonan
- Alice Bridge Memorial Scholarship: Andrea Manners
- Warden Prize: Carol Mitchell
- Yellow Dog Society Scholarship: Jessica Morton, Aaron Tanz
- David D. Peebles Scholarship: Omar Niode
- Anheuser-Busch Quality Assurance ASBC Graduate Student Scholarship: Jeremy Roza
- General Dillingham Produce Scholarship: Richard Sultanov
- 2nd Lt. W.R. Saiz Memorial Scholarship: Anne Taylor



Awardees at the NCIFT '06 Banquet

DEPARTMENTAL CHANGES

In Summer 2005, the Food Science and Technology department's administration underwent major changes due to stepping down, retirement, new hire, and stepping up.

First, Charlie Shoemaker ended a 10-year long term as the Department Chair. The department is grateful for his dedication to the department. During his term as Chair, the department was fortunate to make wonderful hires like Alyson Mitchell, Charlie Bamforth (our new department chair), and Glenn Young. The dream of being able to move to new academic buildings came to fruition. After stepping down from the Chair position, Charlie Shoemaker has been enjoying a well-deserved sabbatical in Spain.

Next, Teri Wolcott decided to retire after 37 years with UC Davis. Teri began her career as a student assistant while studying mathematics here at UC Davis. She later became associated with research programs on thermal

processing with Sherm Leonard, George Marsh and finally Larry Merson. After Pat Poirier retired in the early 90s, Teri stepped in as the department manager on an acting basis. Well, she got hooked and stayed on as the department manager until her retirement in Summer 2005. During her retirement, she has been enjoying



Jamie Brannan, Judy Blatter and new Department Manager Karen Gurley work on a project.

traveling - her latest expedition was to see her daughter in North Carolina. Teri is also catching up on her quilting and crafts and simply relaxing.

Trying to fill the void left behind by these positions, the depart-

ment and the dean convinced Charlie Bamforth to step into the department chair position. Charlie Bamforth has been the Anheuser-Busch Endowed Professor of Malting and Brewing Sciences since 1999. Prior to coming to UC Davis, Charlie had loads of research and management expertise in the brewing industry at Brewing Research International, Bass Brewers, and the University of Sheffield. See page 1 of this newsletter for additional comments from Charlie about the future directions of the department.

Finally, the department hired Karen Gurley as the manager. Karen has been at UC Davis since 1988 in various departments. So far, Karen has found her new position to be terribly exciting and fun. She comments, "The students in this department make it such a fun place to work. They are wonderfully involved and make their science exciting!"

JOHN BRUHN POSTER SESSION RECOGNITION

John Bruhn, who has announced his intent to retire on June 30, 2006, believes that creating technical posters encourages students to learn important skills in critical thinking and organization. It's appropriate then that IFT is unveiling the Dairy Foods Division John C. Bruhn Graduate Poster Competition.

Bruhn has been involved in IFT since 1970 on both the national and local level with NCIFT.

"I have been extensively involved with the Dairy Foods Division since I joined," Bruhn said. He has made major improvements regarding governance policies, served in leadership roles including serving on the DF Board of Directors, and in elected and

appointed roles in the Dairy Foods Division. He has also established scholarships.

"My recollection is that I am the only leader of the division who received a plaque stating '...in recognition of the leadership, enthusiasm, and professionalism.'"

Bruhn said the technical poster session is often the first step of communication scientists take to disseminate their findings from the lab. "Of course, scientists from industry and universities do this often through grad students." In this way, grad students get an enhanced education. He said a good poster will be short and concise, with good graphics and presenting a conclusion that can be easily



Dr. John Bruhn

followed by the viewer based on the data presented.

Students wishing to participate in the Dairy Foods Division John C. Bruhn Graduate Poster Competition can do so by checking the appropriate place on the annual meeting registration form. For more information on entering, visit the abstract guideline website at www.ift.org/pdfs/am-abstracts/2006_Abstract_Guidelines.pdf.

FACULTY PROFILE - ALYSON MITCHELL

Food plants produce a wide variety of healthy chemicals and Dr. Alyson Mitchell is determined to make sure consumers have the opportunities to get ample quantities of these phytochemicals in their diets.

Dr. Mitchell, who joined the department as an Assistant Professor of Food Chemistry in 2000 and was promoted to Associate Professor in 2004, is actively studying how pre- and post-harvest factors such as agricultural production practices and processing techniques influence the levels of antioxidants such as phenolic acids and flavonoids in foods. Her research group employs sophisticated analytical techniques such as liquid chromatography/tandem mass spectrometry to identify and quantify phytochemicals and their metabolites in foods and biological tissues.



From left, Yun-Jeong Hong, Alex Chassy, Jaime Rudolf, Alyson Mitchell, Katherine Meyers, Stephanie Burns

Dr. Mitchell and Dr. Diane Barrett, Food Science and Technology Fruit and Vegetable Processing Specialist, made a big splash in the field when they co-authored a paper demonstrating that marionberries, strawberries, and corn grown under

organic or sustainable practices produced higher levels of total phenolics and ascorbic acid than did the same foods grown under conventional agricultural practices. Their paper,

published in the *Journal of Agricultural and Food Chemistry* in 2003, continues to be the journal's most accessed article. (See page 5 for more details.) Dr. Mitchell is continuing this research by comparing tomato samples archived since 1994 by the UC Davis Long Term Research on Agricultural Systems that were grown using organic and conventional methods.

The impacts of processing techniques, such as high pressure processing and aseptic processing on phytochemical levels in foods, are also being studied by Dr. Mitchell's group. As Dr. Mitchell explains, "Processed foods are here to stay; we need to make them more healthy."

Research conducted by her group also includes studies of how the diet influences biotransformation reactions that govern the amounts of flavonoids that are available to the body, and studies of how pesticide applications may influence phytochemicals in breads made from acorns.

PRE-PICNIC DAY BARBECUE

The Food Science and Technology Department continues its tradition of having a fun-filled barbecue on the day before Picnic Day. The 13th Annual Pre-Picnic Day barbecue will be April 21, 2006, at 5 p.m. in the Cruess Hall Courtyard. Choices for dinner include steak, chicken, salmon, or vegetarian. Tickets for adults are \$10 and for children \$5. We hope you can attend! RSVP to:

Karen Gurley
kmgurley@ucdavis.edu

ALUMNI NEWS

In future editions, we hope to have a section with small tidbits of news about our alumni. Please tell us where you are and what you are doing these days. We'd love to hear from you. Contact Karen. Her email is under the barbecue story just to the left!

SPECIAL THANKS TO:

The Food Science and Technology department is grateful to the Department External Relations and Outreach Committee for their efforts in research and writing the articles for this newsletter. Members are: Carl Winter (Chair), Sharon Shoemaker, Mike O'Mahony, Christine Bruhn, Glenn Young, Carol Cooper, Jamie Brannan, Karen Gurley, Steve Dunn, Kit Meyers, and Allison Aubin.