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Robert Mondavi Institute for Wine and Food Science

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# E-news #023: Summer 2010

## In This Issue

- [Executive Director's Update](#)
- [Construction Update on Winery, Brewery, and Food Processing Facility](#)
- [Fritz Maytag Featured Speaker at CA&ES June Commencement Ceremonies](#)
- [Darrell Corti presents \*De distillatione\* and the "Soul of Wine"](#)
- [Recent Gifts Help Food Science and Technology Department Equip Pilot Plant](#)
- [Dairy Technology Conference Highlights UC Davis Research Discoveries that Benefit Product Innovation](#)
- [The RMI Releases the Newest Addition to the Historical Agricultural Book Series](#)
- [Wine Economics Meeting at UC Davis, June 2010](#)
- [Western Center for Agricultural Health and Safety Celebrates 20th Anniversary](#)
- [Gates Grant May Unlock Milk's Secret](#)
- [The Culinary Institute of America at Greystone Launches Oleoteca® Villa Campestris](#)
- [Most Imported Olive Oils Don't Match 'Extra Virgin' Claims, Study Find](#)
- [Olive Center Hosts Super-High-Density Olive Production Symposium](#)
- [Food Science and Technology Students, Faculty, and Alumni Take Top Honors at IFT 2010](#)
- [Upcoming Short Course on How to Deliver Fresh Food Quality via Advanced Processing Technologies](#)
- [In Brief](#)
- [Upcoming Events](#)
- [Contributors to "RMI Wine and Food Bytes"](#)

## Executive Director's Update

By Clare Hasler



Another summer is on the wane. And hasn't the weather been incredible? Somehow we have miraculously escaped weeks of triple-digit temperatures! But then again, it is not yet September...

As the summer draws to a close, we have an opening to celebrate. The Teaching and Research Winery and the August A. Busch III Brewing and Food Science Laboratory have officially opened! The fencing is down, landscaping is done and the facility can be entered without a hardhat. As Julie Nola states in her briefing below, brewing equipment has moved over from Cruess Hall and fermenters are being installed. The viticulture and enology department will be crushing grapes from this year's harvest in the new winery. Although the public grand opening is not until January 28, 2011 (mark your calendars), the new building has already attracted a significant amount of attention because it has been built to LEED (Leadership in Energy and Environmental Design) Platinum standards—the first production facility of its kind in the world.

Something else attracting a lot of attention these days is a new report from the Olive Center indicating that many of the olive oils sold in California retail stores are not “extra virgin” as claimed on their labels. In fact nearly 70 percent of imported oils sampled by the research teams from UC Davis and Australia failed to meet extra virgin olive oil standards. Read more about this landmark study in the [press release by Pat Bailey](#).

Dairy was also in the spotlight in June when the RMI hosted “Dairy Technology: California Leading the Way through Strong University-Industry Partnerships”. Suanne Klahorst captures the highlights of this event in her excellent [summary below](#). We also timed the release of the third book in the RMI Historical Agriculture Book series with this conference, [Cheddar Cheese Making & Elements of Dairying](#).

Olive oil . . . dairy products . . . we can't ignore wine! Also in June, Professor Julian Alston organized a successful multi-day conference on wine economics, attracting over 150 attendees from 20 countries. In addition to a dinner in the vineyard room at the Robert Mondavi Winery one evening, as well as a Mariachi band with local Mexican fare in the Mondavi Center on campus, the meeting ended on a very high note with a day of visits to several Napa Valley wineries including Opus One, Cakebread Cellars, Silver Oak, and Rubicon Estates, to name just a few.

It has been a very busy summer of events. But we have a lot more on the calendar for the next academic year so check our website to for the latest RMI happenings!



Clare

## **Construction Update on Winery, Brewery, and Food Processing Facility**

By Julianne Nola

The August A. Busch III Brewing and Food Science Laboratory and the Teaching and Research Winery have received fire clearance and official occupancy! Through a generous donation from Anheuser-Busch InBev, the brewing equipment has moved to its new location and is expected to be in working condition by the end of September. The viticulture and enology department has been moved into its spaces with lab equipment and the teaching fermenters. And through another very generous donation, the winery has received the first of its 152 research fermenters. Milk Processing is currently ordering equipment and the Food Science Pilot Plant will occupy its space following harvest in November. There remain some final touches for the building, but congratulations are in order to all those who contributed to the success of this project. Cheers!



## Fritz Maytag Featured Speaker at CA&ES June Commencement Ceremonies

By Clare Hasler-Lewis

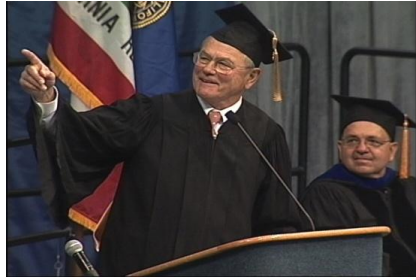


Photo by UC Davis ATS Mediaworks

Fritz Maytag, chairman emeritus of Anchor Brewers and Distillers, was the featured speaker at the spring commencement ceremonies of the UC Davis College of Agricultural and Environmental Sciences on Sunday June 13.

The theme of Mr. Maytag's remarks was creativity and inventiveness. Few are more qualified to provide advice and encouragement on both topics than Mr. Maytag who hails from a long line of creative entrepreneurs.

A native of Newton, Iowa, his great grandfather founded the Maytag appliance company with an innovative washer design. In 1941 his father created Maytag blue cheese with milk from the family's Holstein dairy cows and a process developed by land-grant scientists at Iowa State University. Fritz Maytag has carried on that enterprising spirit for more than 40 years. In 1965 he acquired the struggling Anchor Brewing Company, which had been making its traditional Anchor Steam Beer in San Francisco since the late 1800s. His subsequent success inspired young beer makers throughout the country to emulate the Anchor Brewing microbrewery model. In 1993 he established the Anchor Distilling Co., whose Old Potrero Rye Whiskey and Junipero Gin have stimulated a burgeoning artisanal distilling movement. Maytag also owns celebrated York Creek Vineyards in Napa's Spring Mountain District.

Although Maytag went to Stanford, he told the graduating class that "... I have been going to Davis ever since." Maytag has long supported the brewing science program at UC Davis and in 2005 he became a founding member of the honorary board of the Robert Mondavi Institute for Wine and Food Science.

During his remarks, Maytag quoted several scholars including Henry David Thoreau: ("In wildness is the preservation of the world") and Dylan Thomas in regards to "the wildness within." Mr. Maytag advised the graduates to tap into their own wildness in order to maximize their creativity and inventiveness.

## Darrell Corti presents *De distillatione* and the "Soul of Wine"

By Axel Borg and Kathy Sachs-Barrientes



Photo by Greg Hirson

On the evening of May 24, 2010, a very special presentation took place in the Silverado Vineyards Sensory Theatre at UC Davis. Darrell Corti, a member of the Robert Mondavi Institute board of executives and a long-time benefactor of UC Davis presented a copy of Giambattista della Porta's *De distillatione* 1608. This remarkable book was donated to honor Professor Roger Boulton and the late Professor James Guymon of the Department of Viticulture and Enology at UC Davis.

The presentation included Professor Boulton's wonderful talk on the teaching and research contributions of James Guymon made to the Department of Viticulture and Enology, the University of California, and the state of California in the areas of distillation and aging for the production of high-quality brandies and distillates.

The highlight of the evening was a rare tasting of samples of brandies that had been made by Professor Guymon, presented by Darrell Corti. The four research brandies were made in the 1960s and have been "resting" in the cellar in Wickson Hall since then. Darrell Corti, Chik Brenneman (viticulture and enology winery manager), Roger Boulton, and one of Guymon's former students, Brad Alderson, had selected four brandies for the tasting from 22 different lots. Among the four selected were: a "Lodi whisky" style column-distilled and aged in used-bourbon barrels; a "rancio" style pot distilled and aged for more than 30 years in barrel, showing highly-developed aging character; a "fruity" style highlighting the Cognac style of distillation and aged in once-used barrels; and a "bordelais" style aged in new French Nevers oak.

The evening provided a unique opportunity for participants to experience both the history of the brandy program and an insight into the life of Professor Guymon and the significance of his research. The tasting of these rare 40-year-old brandies further reinforced the important historical role of the Department of Viticulture and Enology's brandy distillation program.

Corti's motivation behind purchasing this rare book was that it allowed him to inform and remind students, faculty, and distilled spirit aficionados about the importance of the history the Department of Viticulture and Enology's distillation program and its linkage to the field of distilled spirits. "In order to make brandy you first need to make wine and before you make wine, you first need to grow grapes," he says "And if it is said that brandy is the soul of wine, then wine is the soul of grapes."



From left, Axel Borg, Andy Waterhouse, Darrell Corti, and Roger Boulton (Photo by Greg Hirson)

The Distilled Beverage Technology course was originally developed and taught for more than 30 years by Professor Guymon. Professor Roger Boulton continues to teach this course as part of the department's curriculum, but without the space to house a still, the teaching program does not include the hands-on methods of distillation. As the department moves into its new research and teaching facility, attention can now be directed to planning for a new distillery to continue these activities at a level which they deserve.

## **Recent Gifts Help Food Science and Technology Department Equip the Pilot Plant**

By Melissa Haworth



The Department of Food Science and Technology is working hard to ensure the newly completed August A. Busch III Brewing and Food Science Laboratory will be filled with appropriate equipment for teaching, research, and industry collaboration. Building on a generous gifts-in-kind of equipment from Con Agra Foods and Anheuser-Busch, Inc., the department is pleased to announce contributions made to date in 2010.

### **California Processing Tomato Industry Pilot Plant**

Recognizing the need for well-trained food technologists throughout California, the Southern California Institute of Food Technologists Section (SCIFTS) made another contribution to the project in February, this time to purchase equipment. This is in addition to SCIFTS' commitment in 2005 to help build the facility. SCIFTS members are challenging the food industry to match the commitment.



Adding to the incredible support of The Morning Star Packing Company and many other leaders in tomato processing, Pacific Coast Producers, J.G. Boswell Company, and Del Monte Foods have committed to gifts to support equipping the Pilot Plant and creating the flexible, hands-on space so critical for food science teaching and research. In addition, an anonymous industry donor contributed several important pieces of equipment for the facility including a conveyer line and a dicer. Broad support from the processing tomato industry has been crucial in making this entire facility a reality for the department.

Finally, another contribution to support the equipping and moving of the pilot plant was given in honor of Ron McNiel Sr. the "godfather" of the used-equipment business and a man who believed strongly in higher education. The department is currently working on securing a gift-in-kind of a forklift. The remaining priority items include a MicroThermics UHT/HTST/HVH and refurbishment of the existing rotary steritort and freeze dryer.

### **Anheuser-Busch InBev Brewery**

In 2006, employees of Anheuser-Busch, Inc. installed a modern, pilot-scale brewery in the Cruess Hall pilot plant. Now, the Anheuser-Busch Foundation has provided the funds to move and re-install the brewery in the newly named Anheuser-Busch InBev Brewery at the new facility. Thanks to this generous gift, the brewery will be ready to go just in time for fall quarter.



Professor Charlie Bamforth

### **Milk Processing Laboratory**

Hilmar Cheese Company stepped forward with the first major contribution from the California dairy industry to support the Milk Processing Laboratory and is challenging others in the industry to support the project. "Innovations in dairy products and processing are critical to meet the needs of customers worldwide and to keep the United States competitive," said John Jeter, Hilmar Cheese Company chief executive officer and president. "The research and teaching excellence at UC Davis is crucial to our continued growth and development. We encourage the industry to join us in supporting new dairy research at the August A. Busch III Brewing and Food Science Laboratory."



The Department of Food Science and Technology is working to raise a final \$300,000 to purchase and refurbish critical equipment and finish moving existing pieces from Cruess Hall. Those interested in supporting the department in this effort should contact Melissa Haworth [mdhaworth@ucdavis.edu](mailto:mdhaworth@ucdavis.edu), (530) 979-1440.

### **Dairy Technology Conference Highlights UC Davis Research Discoveries that Benefit Product Innovation**

By Suanne Klahorst

UC Davis Chancellor Linda Katehi, CA&ES Dean Neal Van Alfen, and RMI Executive Director Clare Hasler-Lewis welcomed dairy executives to the Robert Mondavi Institute conference entitled "Dairy Technology: California Leading the Way through Strong University-Industry Partnerships" on June 10. Dr. Joe O'Donnell, director, California Dairy Research Foundation, introduced a portfolio



of dairy discoveries that have brought a paradigm change for how milk and milk-derived ingredients are known to contribute to health.

Particularly important were genomic studies funded by the foundation to better understand the constituents of human and mammal breast milk, globally recognized as the gold standard of nutrition for the growth and development of newborns. Since research conducted over the past six years has identified specific human breast milk constituents and linked them to mechanisms by which they are thought to protect and nourish infants, pediatricians have been encouraged to run clinical trials that may prove beneficial for using those same constituents from bovine sources to prevent gastrointestinal infections in premature infants in neonatal intensive care.

New perspectives on the evolutionary basis of milk and the components that are unique to each mammal species has enabled milk to serve as a model for nature-tested nutrition. Research leading to a better understanding of milk's role in metabolic processes was presented by professors and faculty in the UC Davis Foods for Health Institute, including its director, Bruce German, and members David Mills, Maria Marco, and Carolyn Slupsky.

Industry-funded research on whey proteins has provided new products that can help manage diabetes and slow the development of metabolic syndrome, according to a presentation by Loren Ward, director of research and development at Glanbia Nutritionals. Bill King, business development director of DSM Nutritional Products, the Netherlands, looks for UC Davis research that can enhance business opportunities in yogurt, cheese, and probiotic cultures. His talk provided insights into a hierarchy of market segments for specific niches in health, medical, prescription, and mass market foods.

A review of engineering technologies presented by professors Nitin Nitin, James Cullor, and William Ristenpart provided unique glimpses into research-stage technologies that may have practical applications for improved efficiency or new processes. As the Peter J. Shields Chair in the Department of Food Science and Technology, Professor John Krochta serves as the academic advocate for dairy research at UC Davis. His presentation of the industry-funded McKinsey report identified future goals of the California dairy industry: improved efficiency, reduced environmental impacts, product innovation, and improved economic understanding of new technology and its impacts.



From left, Bill King, David Mills, Carolyn Slupsky, Maria Marco and Bob Boynton

Tedd Struckmeyer from the Hilmar Cheese Co. presented the real-world concerns of his operations, which balance opportunities for new economically viable products with traditional business-as-usual for its dairy cooperative owners and their established core customers.

Sharon Shoemaker, director of the UC Davis California Institute of Food and Agricultural Research (CIFAR) took conference attendees on a "world tour" of the CIFAR network of industry and government affiliates in the U.S., Canada, Europe, and Asia. Global leaders in marketing and innovation are using CIFAR to open doors that enable their products to access new markets, doors that frequently open through educational collaborations with Asian universities with similarly thriving food science departments. CIFAR is also a key participant in evaluation of sustainable energy technologies for food-related processes, and has helped government and industry to explore the feasibility of sustainable practices for two decades.

Professor Krochta invited dairy representatives to join a committee to address future collaborations that will provide wider access to UC Davis expertise and facilities. Industry representatives seemed impressed overall with the value of the conference in relation to their interests. Lee Blakely, formerly of Land O' Lakes (where he is now a consultant), remarked that there needs to be more conferences like this in the future. "If we are going to sell milk, we have to give people a reason to drink it other than just saying 'it's good for you,'" he said. Struckmeyer added that such events help to "build relationships with the university, so when we need help to figure out a problem, we know who to go to for help." Marcia McGlochlin, director of food safety and regulatory affairs for Clover Stornetta Farms, Petaluma, was pleased to see that "food science at UC Davis is reenergized with new facilities and new research."

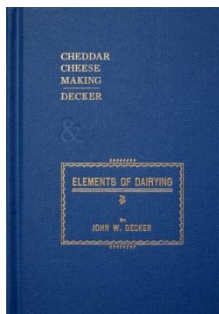


From left, Greg Miller, Bill Graves, and David Mills

Conference participants toured the soon-to-be-completed August A. Busch III Brewing and Food Science Laboratory, the Milk Processing Laboratory, and the Teaching and Research Winery, scheduled to begin some of its operations in fall 2010. Built to be certified as a LEED Platinum facility, it will be the only facility of its kind in the world. By investing in micro-scale pilot equipment, the food pilot plant will offer industry the opportunity to evaluate how pilot facilities can be reconfigured to increase efficiency while maximizing utility per square foot.

An executive summary of the proceedings is being completed and will be circulated to all conference attendees.

## The RMI Releases the Newest Addition to the Historical Agricultural Book Series By Clare Hasler-Lewis



*Cheddar Cheese Making & Elements of Dairying* is the third book in the Robert Mondavi Institute's series of historical agriculture works made possible by an anonymous benefactor. I am especially pleased that this book made its debut in June at our symposium, "Dairy Technology: California Leading the Way through Strong University-Industry Partnerships".

This is the first time that John Wright Decker's two books, *Cheddar Cheese Making* (1893) and *Elements of Dairy* (1903) have been published together in one volume. Augmented with newly discovered photographs and biographical information, along with Mark Johnson's perceptive foreword—*Decker on*

*Cheese & Dairying*—the book offers a unique firsthand account of how cheese was made in the late 1800s, a time when the science of cheese-making was just beginning to unravel its mysteries. The experiences of Decker's students were not unlike those being faced by today's farmstead and artisanal cheese-makers. Decker was an instrumental force in the United States and Canada, establishing the idea that to develop a better overall dairy industry, cheese-makers had to produce better cheeses. And better cheeses come from educated cheese-makers.

This exclusive series of books began with the publication of *The Wine Press and the Cellar* by Emmet Rixford in fall 2008 and was followed in June 2009 by *California's Olive Pioneers: Early Essays on Olives and Olive Oil*, which recently won the Benjamin Franklin Silver Award for 2010 in both the History and Gardening/Agriculture categories.

## **Cheddar Cheese Making & Elements of Dairying**

Foreword by Mark E. Johnson, Ph.D., senior scientist, Wisconsin Center for Dairy Research, University of Wisconsin-Madison, 2010. 264 pp. Hardcover. ISBN: 978-0-9816345-2-4.

***This jewel of a book may be purchased for \$60.00. Proceeds from sales of the book will be used to support RMI programs.***

Copies of this book are available for purchase at the UC Davis Bookstore, through the Robert Mondavi Institute website, <http://RobertMondaviInstitute.ucdavis.edu>, or by contacting Kim Bannister at 530-752-5171 (phone), 530-752-7080 (fax), or [kbannister@ucdavis.edu](mailto:kbannister@ucdavis.edu) (e-mail).

## **Wine Economics Meeting at UC Davis, June 2010**

By Julian Alston



"Outlook and Issues for the World Wine Market" was the subject of a symposium hosted by the University of California Agricultural Issues Center and the Robert Mondavi Institute for Wine and Food Science, held on June 25 at the UC Davis Conference Center. At the symposium, a panel of leading wine economists from the United States, Europe, and Australia discussed how current and emerging issues will shape world wine markets over the coming decades. After the presentations, a panel of U.S. wine industry leaders presented comments on the issues raised by the speakers, followed by a vigorous public discussion of the issues, which continued into the evening at a reception after the formal sessions were closed.

The symposium was organized as a curtain raiser for the fourth annual conference of the American Association of Wine Economists (AAWE) that was held June 26-28 at UC Davis. The 2010 AAWE conference sessions featured over 100 presentations on the economics of wine and food and related subjects. Sessions at the conference covered topics ranging from vineyard economics through the economics of winemaking, wine prices, wine marketing, and judging wine; and beyond wine to sessions on related aspects of the economics of food, and even beer. A highlight of the conference was the session on the value of wine competitions.



From left, Margrit Mondavi and Jeff Mosher

Over 150 participants from more than 20 countries participated in what was widely reported to have been a very successful conference and pre-conference symposium, where they were treated to an extensive program of social events that complemented a rich and rewarding scientific program. Both the symposium and the AAWE conference were organized by the UC Davis RMI Center for Wine Economics with great support from staff of the RMI and the UC Agricultural Issues Center. Details of the program including abstracts for AAWE conference papers, as well as audio files and copies of presentations at the symposium, can be found at the web site:

<http://aic.ucdavis.edu/aaweconf/program.htm>



## Western Center for Agricultural Health and Safety Celebrates 20<sup>th</sup> Anniversary

By Sandra Freeland



From left, CA&ES Dean Emeritus Charles Hess, vet med Dean Bennie Osborn, and UC Davis Provost Enrique Lavernia

On June 8, 2010 the Western Center for Agricultural Health and Safety at UC Davis (WCAHS) celebrated its 20<sup>th</sup> Anniversary at the Robert Mondavi Institute for Wine and Food Science. RMI executive director Clare Hasler-Lewis welcomed the group of 75 into the Sensory Building Silverado Vineyards Sensory Theatre. Words of appreciation and congratulations were delivered by Provost Enrique Lavernia; associate vice chancellor/UC Davis Health System, Tom Nesbitt; School of Veterinary Medicine dean

Bennie Osborn, Lovell "Tu" Jarvis, professor of agricultural and resource economics, and WCAHS external advisory board members, Guadalupe Sandoval, managing director, California Farm Labor Contractors Association, and William Krycia, CalOSHA regional manager. Dr. Marc Schenker, current and founding director of WCAHS was presented resolutions by the offices of U.S. representative Mike Thompson and state senator Lois Wolk.

Celebrities pouring their wines were Richard Rominger and Bruce Rominger (Rominger West Winery), and Joan Turkovich and Tony Turkovich (Turkovich Family Wines). Berryessa Gap Winery was represented by marketing and hospitality manager Meagan Foley.

## Gates Grant May Unlock Milk's Secret

By David Mills



UC Davis microbiologist David Mills has been awarded a \$100,000 challenge grant from the Bill & Melinda Gates Foundation to test whether certain complex sugars in milk can be used to prevent life-threatening diarrheal diseases in young children.

Globally, these gastrointestinal infections are the second-leading cause of death among children under the age of five, each year killing 1.5 million children, according to the World Health Organization.

"The grant equips us to work with the California dairy industry to obtain and evaluate milk oligosaccharides that are found in whey, a byproduct of cheese processing," said Mills, an expert on the molecular biology of lactic acid bacteria used in foods. "We will examine the ability of these compounds from milk to prevent gastrointestinal infections and to establish healthy bacteria in the intestines."

For several years, Mills and colleagues have been researching the basic scientific principles of this study. They are now working with the UC Davis Foods for Health Institute to move the basic research toward practical applications in human health.

Earlier research has shown that similar oligosaccharides in human breast milk play an important role in supporting growth of protective bacteria in babies' digestive tracts. Such bacteria are known to minimize the risk and severity of diarrheal disease and other gastrointestinal infections in infants.

The Davis researchers are hopeful that milk from cows will provide an abundant source of oligosaccharides that have comparable therapeutic characteristics for young children who are no longer breast-feeding.

With the Gates Foundation grant, Mills and his UC Davis colleagues, food scientists Bruce German and Glenn Young, will work with the California dairy industry to obtain purified oligosaccharides from milk.

The research team will conduct a three-pronged study examining to what extent oligosaccharides from cow's milk influence the growth of various intestinal microbes, promote colonization of healthful intestinal bacteria, and prevent salmonella infections in laboratory mice.

Mills noted that if the researchers' hypothesis proves correct, they then plan to explore how oligosaccharides can be incorporated in a healthful, cost-effective manner into various food products designed for nutritional therapy and for use in international famine and malnutrition relief efforts.

California Dairy Research Foundation executive director Joe O'Donnell added, "These studies will prepare dairy food developers to focus on a great variety of products based on cow milk, which naturally contains these health-promoting oligosaccharides."

The award is one of 78 grants made by the Gates Foundation in the fourth round of its international Grand Challenges Explorations program, a five-year, \$100 million effort to promote innovation and major research breakthroughs that will benefit global health.

"In partnership with the dairy industry, we hope to unlock the hidden potential of milk to protect the health of young children and other at-risk populations around the globe," said Neal Van Alfen, Dean of the UC Davis College of Agricultural and Environmental Sciences.

## **The Culinary Institute of America at Greystone Launches Oleoteca® Villa Campestri** First Super-Premium Olive Oil Program of its Type in the United States By Cate Conniff



Photo by CIA/Terrence  
McCarthy

As part of a groundbreaking initiative to introduce super-premium olive oil in the United States, The Culinary Institute of America (CIA) recently launched the Oleoteca® Villa Campestri and related OliveToLive restaurant offerings at its Greystone campus in the heart of the Napa Valley.

The Oleoteca Villa Campestri at the CIA at Greystone was created to bring some of the world's very best olive oils—what many are now calling "super-premium" olive oils—to American chefs and food enthusiasts. Representing top estates in California, Spain, Italy, and Greece, these oils are selected for their outstanding sensory profiles and for meeting technical standards higher than those for "extra virgin." These select olive oils are then handled under the most stringent storage and transportation

conditions to assure a degree of freshness and flavor that will be strikingly new to most Americans.

The Oleoteca Villa Campestri was founded in Italy in 2000 to bring a new category of olive oil excellence, through educational programs, scientific partnerships, and culinary research, to the worlds of hospitality, food, and wine. The third party in this partnership of elevating standards for olive oil quality is Association 3E, a nonprofit organization whose mission is to support the three "Es"—ethics, excellence, and economics—in the pursuit of super-premium olive oils.

"The understanding and appreciation of top-quality olive oil is perhaps 25 years behind that of wine in the United States. We have designed our new Oleoteca to bring these truly memorable oils to a wider audience, and stimulate greater interest in the entire top end of the olive oil sector," notes Charles Henning, managing director of the CIA at Greystone. "A focus on excellence—and the science and innovation that support excellence—will bring benefits to the entire production sector as well as olive oil lovers everywhere."



Photo by CIA/David Wakely

Oleoteca oils start their journey to the CIA at Greystone from olive groves and producers which have already met the world's most comprehensive growing and production standards. Olives are picked at the height of ripeness and flavor profile for a particular olive variety and then milled very quickly after harvest, typically within hours. The aromatics of these oils are captured at the peak of their "new harvest" freshness by being stored under nitrogen gas atmosphere and then transported under ideal conditions (away from light, air, and oxygen). Oleoteca oils remain in this pristine state right up to the point of being individually bottled at the CIA at Greystone's Flavor Bar or served at its restaurant.

The Oleoteca at the CIA at Greystone will be part of the Marketplace at Greystone's innovative Flavor Bar, where dynamic and interactive "Taste Like a Chef" sensory and educational sessions give visitors insights into how a chef tastes and uses flavor to create a variety of foods. In the olive oil session, guests will learn how super-premium olive oils are produced, how to taste olive oil, olive oil attributes and styles, and how to cook with and store olive oil.

## Most Imported Olive Oils Don't Match 'Extra Virgin' Claims, Study Find

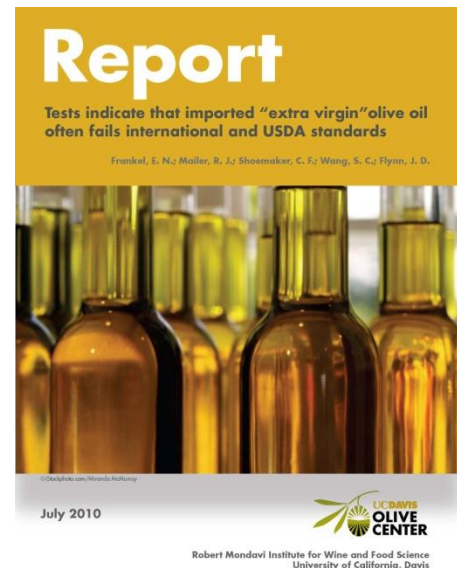
By Pat Bailey

Many of the olive oils sold in California retail stores are not the top-grade "extra virgin" oils that their labels claim they are, according to a landmark study by researchers at the University of California, Davis, and in Australia.

The research team found that 69 percent of the imported oils sampled, compared with just 10 percent of the California-produced oils sampled, failed to meet internationally accepted standards for extra virgin olive oil.

The new study, the first of its kind by an American academic institution, examined olive oils labeled as extra virgin, and purchased in California supermarkets and "big box" retail outlets. A report detailing the study's findings and the names of the brands evaluated is being released today by the UC Davis Olive Center and is available online at:

<http://olivecenter.ucdavis.edu/>.



"The intent of the study was to provide consumers and retailers with an accurate picture of the quality of olive oils now being marketed through grocery stores and other retail outlets in California," said Dan Flynn, executive director of the Olive Center, noting that the United States is the third-largest consumer of olive oil in the world.

“Our hope is that these findings will lead to improved methods for evaluating extra virgin olive oil, and increased consumer confidence that ‘extra virgin’ on the label means extra virgin in the bottle,” he said.

Extra virgin olive oils, which command a premium price in the marketplace, must be extracted from the olive without heat or solvents, unlike cheaper refined oils. International and U.S. Department of Agriculture standards also require that extra virgin olive oils meet specific criteria for chemical makeup and sensory qualities including flavor and aroma.

“Before this study, we had anecdotal reports of poor quality olive oil being sold as extra virgin,” said Flynn. “Now there is empirical proof.”

“The oils that failed in our tests had defects such as rancidity—many of these oils just did not taste good,” he said.

Flynn noted that the defective samples failed the extra virgin standards for one or more of these reasons:

- oxidation due to elevated temperature, light, and or aging;
- adulteration with cheaper refined olive oil; and
- poor-quality oils made from damaged and overripe olives, processing flaws, or improper oil storage.

The study also revealed that the analytical chemistry methods established by the International Olive Council and the U.S. Department of Agriculture often do not detect defective oils that fail extra virgin sensory standards. The researchers found that the chemistry methods used in Australia and Germany were more effective in confirming negative sensory tests.

## **Background**

The Olive Center initiated this study to investigate widely publicized, but unconfirmed, reports that olive oils labeled as extra virgin and imported from abroad for sale in the United States are actually lower quality olive oils.

Extra virgin is the highest grade of olive oil, according to standards set by the U.S. Department of Agriculture and the International Olive Council, an international, intergovernmental organization that deals with issues involving olives and olive oil.

The council, established by the United Nations, includes countries that produce 98 percent of the world’s table olives and olive oil.

The United States is not a member of the council; however olive oil produced in the U.S. must meet recently adopted USDA olive oil standards, which closely correspond to the international standards and will go into effect on Oct. 25, 2010. The standards include specifications for the grades of extra virgin, virgin, refined olive oil and olive oil, which is a blend of virgin and refined olive oils.

To be considered extra virgin, the oils must meet very specific chemistry-based criteria, have no sensory defects, and contain some fruitiness in their flavor and aroma.

Extra virgin olive oil can be adulterated by mixing extra virgin with cheaper refined oils such as hazelnut oil or with a cheaper refined olive oil, making the adulteration more difficult to chemically detect.



## **The UC Davis/Australia study**

During one week, beginning March 3, 2010, the researchers bought 14 imported brands and five California-produced brands of olive oil that were being sold under extra-virgin labels at retail stores. The imported samples were purchased from three California regions: Sacramento, the San Francisco Bay Area and Los Angeles County. The California brands were found only in the Sacramento and San Francisco Bay areas.

Three bottles of each imported brand and two bottles of each California brand were sent to the Australian Oils Research Laboratory in New South Wales, where the oils were put through sensory and chemical tests specified by the international Olive Council and also were analyzed using methods adopted in Germany and Australia. Directing the sensory analysis at the Australian lab was Rodney Mailer, an expert on oils and oil crops who has been involved with olive research since 1996.

Chemical analyses also were conducted at the UC Davis Olive Oil Chemistry Laboratory, in most cases using bottles with the same lot numbers as those tested in Australia. Edwin Frankel, one of the world's leading authorities on oxidation of fats and oils, led the UC Davis analyses in collaboration with Charles Shoemaker, co-chair of the UC Davis Olive Center, and Olive Center chemist Selina Wang.

Funding for the study was provided by Corto Olive, California Olive Ranch and the California Olive Oil Council.

## **Olive Center Hosts Super-High-Density Olive Production Symposium**

By Nicole Sturzenberger

Keeping up with the most recent techniques in the California olive oil industry, the Olive Center offered a two-day symposium focusing on super-high-density olive production at the new UC Davis Conference Center. Super-high-density production consists of trellising olive trees into hedge rows so that they can be mechanically harvested. This new technique greatly reduces costs associated with harvest and travel time to the mill, thus ensuring a reasonably priced high-quality olive oil.

The conference was attended by 170 industry experts, farm advisors, potential investors, growers, and producers interested in expanding their knowledge of this up-and-coming area of the olive oil industry. Topics covered everything from orchard establishment with sample cost analysis to harvest transport and postharvest maintenance. During conference breaks, attendees and presenters visited over twenty sponsor booths displaying everything from irrigation materials to mechanical harvesters. Based on the success of the symposium the Olive Center hopes to make this an annual event.



From left, Bill Krueger, Vito Polito, John Post, Adam Englehardt, and Dan Flynn

## **Food Science and Technology Students, Faculty, and Alumni Take Top Honors at IFT 2010**

By Lee A. Meddin

### **Institute of Food Technologists Honorees:**



#### **Dr. R. Paul Singh named 2010 IFT Nicholas Appert Award recipient**

This year's highly prestigious Institute of Food Technologists (IFT) Nicholas Appert Award was presented to R. Paul Singh, joint UC Davis professor of Food Science and Technology and Biological and Agricultural Engineering. The Appert Award honors Singh for preeminence in and contributions to the field of food science and technology.

His research accomplishments span a lifetime career in advancing the application of mathematical techniques for quantitative understanding of physical changes important in food processing. His research results have been transferred from his laboratory to numerous applications in the food industry, including computer software linked to industrial freezers for improving energy efficiency and improved biosensors for use in monitoring quality in food distribution. Internationally he has helped establish and evaluate food engineering programs at universities in South America, Central America, Southeast Asia, Europe, and the U.S. He authored a food science education textbook that has been translated into four languages.

Dr. Singh received a \$5,000 honorarium from the IFT and a bronze medal.



#### **Margaret Lawson (B.S. '77, M.S. '79) named 2010 IFT Calvert L. Willey Distinguished Service Award recipient**

Margaret Lawson, vice president of science and innovation, D.D. Williamson and Co., Inc., received the 2010 Calvert L. Willey Distinguished Service Award for meritorious and imaginative service to IFT.

From her earliest involvement as a student member, Lawson has been an IFT leader, serving as IFT president (2005–2006) and volunteering for numerous roles on national, division, and section levels. She has been a global ambassador for IFT, meeting with food scientists in Japan, Cuba, China, Uruguay, and Mexico to strengthen IFT's alliances with food science organizations in these countries.

During her IFT presidency, Lawson focused on making IFT a global source of sound science and encouraged a diversity of voices within the organization. Lawson's wide range of experience and her enthusiasm for the field of food science has made her a dynamic communicator and a champion of the profession worldwide.

Lawson has served on the Board of Executives of the Robert Mondavi Institute since 2009.



**David Julian McClements (staff research fellow, 1992–1994) named 2010 Marcel Loncin Research Prize recipient**

The award provides research funding to acknowledge and support the work of an outstanding scientist or engineer conducting basic chemistry/physics/engineering research applied to food processing and the improvement of food quality.

**Russ Nishikawa named Outstanding Section or Division Volunteer for the Northern California Section of IFT.**

### **Student Competitors, Department of Food Science and Technology:**

- Food science and technology's team in the Disney Food Product Development Competition took first place with "Mickey's Pocket Pies" (Team members: Anna Caroselli, Chereen Leong, Robert Schwarz, Joseph Alexandrou, Tammy Wong, Christina Ramsay, and John Frelka).
- Suvaluk Asavasanti, Diane Barrett's student, won first place in the Nonthermal Processing Division's graduate student poster competition.
- Mecit Oztop, a student of Kathryn McCarthy's, won second place in the graduate student paper competition in the food engineering division for "Finite element modeling for swelling in whey protein gels."
- Andrew Johnson was a finalist in the undergraduate research paper competition for his paper, "Quantification and imaging of transport of free radicals across micro-emulsion barriers."

UC Davis was in the finals for both the Chapter of the Year competition as well as the Disney Healthy Foods for Kids competition. The Food Tech Club was awarded an honorable mention in the Chapter of the Year competition. Congratulations to all of the competitors—UC Davis was exceptionally represented.

Many thanks to our students, staff, and faculty who worked so hard to support the department and its personnel at IFT. Special thanks to Tiffany Johnson, Judy Blevins, Carol Cooper, and all who helped make the booth, reception, and other events so successful.


### **Upcoming Short Course on How to Deliver Fresh Food Quality via Advanced Processing Technologies**

By Zann Gates

An upcoming short course coordinated by Diane Barrett, *How to Deliver Fresh Food Quality via Advanced Processing Technologies*, will be offered on October 26, 2010, at the Walter A. Buehler Alumni and Visitors Center from 8:00 a.m. to 5:00 p.m.

This unique new short course is the first of its kind to focus on the ability to deliver fresh-like food quality and potential health benefits through advanced processing technologies such as ohmic, high pressure, continuous and batch microwave processing. It will feature presentations and demonstrations by graduate students from four leading universities working on advanced processing technologies.

**"How to Deliver Fresh Food Quality via Advanced Processing Technologies"**  
 UC Davis Walter Buehler Alumni Center  
 October 26, 2010, 8:00 am - 5:00 pm.



Agenda

(Registration & Continental Breakfast)

**Welcome - Overview of Quality and Health Benefits via Advanced Processing Technologies**  
- Diane Barrett, UC Davis

**Consumer Attitudes towards Advanced Processing Technologies** - Christine Bruhn, UC Davis  
(Coffee Break)

**Case Study: Enhancing the Effects of Applesauce using Advanced Processing Technologies**  
- Alyson Mitchell, UC Davis

**Case Study: Processing Tomato Juice with Advanced Technologies - Quality & Health Benefits**  
- Diana Schwartz, OSU

**Quality & Health Benefits of Advanced Processing Technologies Using:**  
**Ohmic Processing (Talk & Demon)** - Julian Jarry, OSU & Grad Student  
(Lunch)

**High Pressure Processing (Talk & Demon)** - Eda Sahindemirciyan, OSU & Student  
Continuous Microwave Processing (Talk & Demon) - Jung Simonsen, NCST & Student  
(Coffee Break)

**Continuous Batch Microwave Processing (Talk & Demon)** - Jerry Tang, OSU & student  
Presented for Superior Quality & Healthfulness via Advanced Processing Technologies - Patrick Davis, US Army Soldier Center

To Register:  
[http://www.fruitandvegetable.ucdavis.edu/Cooperative\\_Extension/Short\\_Courses/Advanced\\_Process\\_Technologies/](http://www.fruitandvegetable.ucdavis.edu/Cooperative_Extension/Short_Courses/Advanced_Process_Technologies/)

Additional topics will address: Mechanism by which advanced processing imparts fresh food quality and health benefits; Consumer attitudes, and two case studies—one on applesauce and one on tomato juice. Instructors are from UC Davis, Ohio State University, U.S. Natick Army Soldier Center, Washington State University, and North Carolina State University.

This course is designed for B.S. level (or above) food scientists, engineers, biochemists, and microbiologists currently working in the food industry, and for representatives from management. It also will be of interest to government officials, process authorities and researchers who are trying to evaluate the benefits of these new technologies. The enrollment fee of \$350 includes all instruction, course materials, continental breakfast, lunch, and morning and afternoon coffee breaks.

For more information on the technical program, please contact the course coordinator, Dr. Diane Barrett, [dmbarrett@ucdavis.edu](mailto:dmbarrett@ucdavis.edu). For logistics and registration, please contact Zann Gates, [zgates@ucdavis.edu](mailto:zgates@ucdavis.edu), (530) 752-5901. To register, visit: [http://www.fruitandvegetable.ucdavis.edu/Cooperative\\_Extension\\_Short\\_Courses/Advanced\\_Process\\_Technologies/](http://www.fruitandvegetable.ucdavis.edu/Cooperative_Extension_Short_Courses/Advanced_Process_Technologies/)

## **In Brief**

### **Got Foam? In Search of the Perfect Beer**

Do you prefer beer with or without foam? Charlie Bamforth, Anheuser-Busch Endowed Professor of Malting and Brewing Sciences at UC Davis, says people want foam, so he's applying scientific principles to produce the perfect beer. SmartPlanet visited his lab and looks to see an instrument that measures the foam stability of beer. To view the video, please visit:

<http://www.smartplanet.com/people/video/got-foam--in-search-of-the-perfect-beer/455194/?tag=col1;video-roto>

### **Linda J. Harris Honored with Frozen Food Foundation Freezing Research Award**

The Frozen Food Foundation, in conjunction with the International Association for Food Protection (IAFP), presented Dr. Linda Harris of UC Davis with the inaugural Frozen Food Foundation Freezing Research Award. The award, which recognizes an individual, group, or organization whose research contributes to the continued enhancement of food quality and safety through freezing, was given to Harris at the 2010 IAFP Annual Meeting in Anaheim, California in August. To read the full article, please visit: <http://www.affi.com/index.asp?bid=6983>

### **Professor Christine Bruhn Recognized for Most-Downloaded Publication in the Journal of Food Science Education**

The Institute of Food Technologists recognized Dr. Christine Bruhn as a co-author of the most-downloaded paper published in the Journal of Food Science Education in 2007. The manuscript, *Development and implementation of a food safety knowledge instrument*, described development, testing, and evaluation of a questionnaire which was converted to an online survey tested with over 4,000 young adults. The questionnaire, which can be used to measure knowledge gained after an educational intervention, met or exceeded generally recognize standards of reliability and validity.

### **Michelle Danyluk Receives Young Researcher Award**

Dr. Michelle Danyluk recently received the 2010 Larry Beuchat Young Researcher Award, which recognizes a young scientist who has shown outstanding ability and professional promise in the early years of their career. Danyluk's research broadly addresses the ecology of foodborne pathogens in foods and the food production environment, primarily focused on salmonella in produce and produce production environments, and its subsequent implication to public health. To read the full article, please visit:

[http://www.crec.ifas.ufl.edu/publications/news/2010/8\\_10\\_10\\_Michelle\\_Danyluk.htm](http://www.crec.ifas.ufl.edu/publications/news/2010/8_10_10_Michelle_Danyluk.htm)



## Upcoming Events

- [Diana Kennedy, the "Elizabeth David of Mexican Cooking" Lecture and Book Signing](#), October 28, 2010
- [Jan Shrem, Owner of Clos Pegas Winery, Lectures on "History of Wine through 4000 Years of Art"](#), November 4, 2010
- Grand Opening: Robert Mondavi Institute for Wine and Food Science Teaching and Research Winery and August A. Busch III Brewery and Food Science Laboratory, January 28, 2011
- [Cheese Loves Beer III](#), March 5, 2011

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