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Robert Mondavi Institute for Wine and Food Science

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# E-news #006: Spring 2006

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## Executive Director's Update

By Clare Hasler

I know that April showers are supposed to bring May flowers, but I for one am done with the rainy Northern California winter! May promises to bring some long-awaited dry, sunny days and it is finally beginning to feel like spring. And speaking of spring, the Robert Mondavi Institute for Wine and Food Science will very soon be springing from the ground next to Old Davis Road ([see story below](#)). We are all looking forward to seeing the vision for this world-class facility materialize!



Without question, the big event during winter quarter was "Terroir 2006." This international conference was hosted by the RMI on March 19-23 and was an overwhelming success with over 200 speakers, sponsors, students, faculty and other wine aficionados present. See the full story below in the [events section](#).

Wine seemed to be the theme of several RMI activities during winter quarter. We were fortunate to have Agustin Huneeus, RMI founding honorary board member and proprietor of Quintessa Winery, on campus in February to share his extensive knowledge and insights on the wine industry as the [Liquid Sugars Lecturer](#). The UC Davis Wine Executive Program also hosted its sixth annual professional development course in Sacramento in early March. The program was once again an overwhelming success and plans are already underway for the [2007 event](#).

RMI research, education and engagement activities are not solely focused on wine but also include beer (the recent dedication of the Anheuser-Busch brewery will be featured in the July E-news), and of course food! After all, where would these ancient and "functional" fermented beverages be without healthy foods? UC Davis recently launched an exciting new cross-campus initiative called "Foods for Health" that will link faculty from the School of Medicine, the School of Veterinary Medicine, the College of Agricultural and Environmental Sciences, the College of Biological Sciences, the College of Engineering, and scientists in the USDA Western Human Nutrition Research

Center. The RMI will be closely involved with this exciting new initiative that [Tu Jarvis discusses below](#).

A handwritten signature in blue ink, appearing to read 'Clare', with a stylized, cursive script.

Clare

## RMI Update

### Construction of the Academic Building Begins

By Clare M. Hasler

Many people have been wondering about the status of the construction of the RMI academic building since the groundbreaking on June 23, 2005. There have been some bumps in the road, but things are finally moving forward. The bid process for overall construction was split into two parts: a bid for site preparation (soil removal/compaction) and another for building construction.

The bid for site preparation was accepted, which led to the flurry of activity on the site in late summer/early fall. Bids for the construction of the building, however, which came just before Christmas, were significantly over budget. Fortunately, in mid-March, the Board of Regents Committee on Grounds and Buildings approved the campus request to augment the RMI budget to cover the necessary additional funds that enabled construction to proceed.

According to Allen Lowry, senior project manager with UC Davis Architects & Engineers, all award documents have been executed with the general contractor, Flintco, as of April 24, 2006, and they received the Notice to Proceed effective May 1. Flintco is already setting up their trailer on site as the Phase 1 contractor, Evans Brothers, finishes up utilities along the east edge of the site. The contract completion date is May 20, 2008, which will (if all goes well) ensure an easy move from May to September 2008.



*Phase 1 contractor, Evans Brothers, finishes up the main telecom conduit going in at the NE corner (Allen Lowry)*

## Events

### Terroir 2006

By Tom Fuller

Defining the concept of “terroir” was the focus of the three-day international conference held on the UC Davis campus March 19–23 in Freeborn Hall. “Terroir 2006,” hosted by the Robert Mondavi Institute for Wine and Food Science, in partnership with the university's Department of Geology and Department of Viticulture and Enology, explored the myths and mysteries of terroir through a dialog between winemakers and earth scientists.

Executive Director Clare Hasler kicked off the event on Sunday night by welcoming the over 200 attendees and speakers to UC Davis. Participants were then treated to welcome remarks by Margrit Biever Mondavi. Mrs. Mondavi expressed her gratitude to the university for organizing the conference, and was pleased that the RMI was continuing its mission to



*Margrit Biever Mondavi and Clare Hasler enjoy mingling at the reception*

enhance the quality of life through wine and food sciences through such outreach activities.

The speaker roster at the conference read like a list of “who's who” in terroir expertise from both academia and the wine industry around the world. (See <http://terroir.ucdavis.edu/program.htm> for the full program). Alain Carbonneau, professor of viticulture at Agro Montpellier in France, truly set the stage with his opening night remarks on the concept of terroir. Monday morning began with welcome remarks from Neal Van Alfen, dean of the College of Agricultural and Environmental Sciences, and Winston Ko, dean of the Division of Mathematical and Physical Sciences.

The conference keynote speaker was Warren Moran, professor emeritus of geography at the University of Auckland (New Zealand), who addressed the various approaches, science, and explanations of terroir. Karen MacNeil, author of “The Wine Bible,” led a tasting of six exquisite wines representing “Terroir Around the World” prior to Monday’s lunch. More than 30 additional speakers representing 8 countries participated in this groundbreaking event. Media, representing many of the industry's top trade and consumer publications, were on hand to document the event and produce numerous news stories. Please see [RMI in the News](#) at the bottom of this newsletter.

During the three days of lectures, seminars and tastings, terroir was discussed, analyzed, attacked and defended on a molecular, scientific, practical and emotional level. At the end of the day (or conference, rather) the only unanimous agreement was that terroir was not going to be defined or explained within the confines of one conference, and that more discussion was warranted.

On Thursday, March 24, many conference participants took part in one of the four field trips to explore the terroir of the Napa and Sonoma wine regions, culminating in a tasting and tour at the Culinary Institute of America at Greystone and a sumptuous celebratory dinner hosted by Beringer Winery in St. Helena, California.

Organizers are extremely pleased with the symposium and turnout and are discussing making the conference a biennial event. Stay tuned!

*Tom Fuller is the owner of Fuller & Associates, a boutique public and media relations firm based in the Napa Valley*

## **Terroir 2006 Gallery**



*Clare Hasler, RMI Executive Director, offers welcoming remarks to kick off the Terroir 2006 conference*



*Distinguished guest, Margrit Biever Mondavi of the Robert Mondavi Winery, expresses gratitude for the conference and the RMI carrying out its vision: Enhancing the quality of life through wine and food sciences*





*Ken Verosub, professor of Geology and conference co-chair, welcomes more than 200 participants*



*Opening speaker, Alain Carbonneau, from Montpellier, France introduces the concept of Terroir*



*Jerry Lohr, President of J. Lohr Vineyards and Wines, and a sponsor of Terroir 2006, attends the opening night wine reception*



*Warren Moran, Professor Emeritus of the University of Auckland, New Zealand, during his keynote presentation on Monday morning*



*Dr. John Gladstones (R) of the Department of Viticulture at the University of Western Australia, speaks with conference attendee David Corey of the Core Wine Company in Santa Maria*



*Several conference speakers share the opportunity to network with others in the wine industry. From left, Warren Moran, James Halliday, Blake Edgar (UC Davis Press), Greg Jones, Phil Freeze*



*Freeborn Hall provides ample space for conference activities*



*Dirk Hampson, President and Director of Winemaking at Oakville's Nickel and Nickel Winery, addresses a full house on "A Practical Perspective of Terroir: It's Not Just the Dirt"*



*Patrick McGovern of the University of Pennsylvania Museum of Archaeology and Anthropology kicks off Session 2: "Terroir Around the World"*



*James Halliday came from Coldstream Hills Winery in Australia to discuss the various Terroir "down under"*



*Graham Weerts and Pat Pickett, both of Stonestreet Winery, join Burke Owens of Copia during a break*



*Graham Weerts, winemaker at Stonestreet Alexander Mountain Estate in Healdsburg, discusses the "Diversity of Terroir Within the Cape and Sonoma County"*



*Karen MacNeil, author of "The Wine Bible" hosts a tasting of six outstanding wines before lunch on Monday*



*One of many wine-tasting opportunities at Terroir 2006*



*Paul Skinner of Terra Spase in St. Helena, California is the first speaker of Session 3: "Geology, Soil and Nutrients"*



*Larry Meinert of Smith College in Northampton, Massachusetts addresses the "Science of Good Taste"*

## **Agustin Huneeus Presents Liquid Sugars Lectureship**

By Rachael Goodhue

On February 21, 2006, members of the UC Davis Department of Agricultural and Resource Economics welcomed Mr. Agustin Huneeus of Quintessa Winery as their 2005-2006 Liquid Sugars Lecturer. Mr. Huneeus' visit was cosponsored by the Department of Viticulture and Enology and the newly formed RMI Center for Wine Economics and Business.

Mr. Huneeus has contributed to the wine industry for over forty years, in both the U.S. and Chile. He began as CEO of Concha y Toro in Chile in 1960. Since then, he has been instrumental in the success of many other wineries, including Veramonte in Chile, and Estancia, Franciscan Oakville Estate, Mount Veeder, and Quintessa in California. Mr. Huneeus is also a founding member of the Honorary Board of the RMI.

During his visit, Mr. Huneeus met with groups of interested faculty members and students from the Department of Agricultural and Resource Economics and the Department of Viticulture and Enology. He was joined by Aaron Pott and Jim Sweeney, Quintessa's winemaker and the managing director of Huneeus Vintners, respectively. The discussions covered many aspects of winegrape growing, winemaking, and wine marketing.



*Agustin Huneeus (2nd from left) joins Clare Hasler, Rachael Goodhue, and Richard Howitt (Professor and Chair of Agricultural and Resource Economics) at the reception following his lecture*

One interesting discussion addressed the relationships among price, cost, and quality. Prices are not chosen based on production costs, but based on a category. If the quality of a wine is high, it will be priced accordingly, even if the costs of production are much lower. On the other hand, if the wine is unprofitable to produce it will not continue to be sold. Mr. Huneeus noted that if a wine in a given price category, such as the \$5 to \$7 range, exceeded the expected quality for that range, the winery would find it difficult to raise the price of that product. Instead, it

would be better off creating a new product, with a new, higher price. The wine's quality would fit consumers' expectations for the new category.

During his lecture, Mr. Huneus talked about the challenges and opportunities facing the California wine industry. He shared two important concepts with the audience: first, what we see today in the wine business, in terms of distribution, pricing, and other activities, will not be there five years from now, due to globalization and other competitive forces; and second, an important principle for success in the wine business is that it is not a brand business. In a brand business, such as packaged consumer goods, firms seek to increase market share by inducing brand loyalty. As their market share increases, they are able to increase profits by exploiting economies of scale.

The wine business operates as a category business. Rather than seeking a specific brand, consumers choose a category, such as Napa cabernet sauvignon, and then a price point. Mr. Huneus identified the primary factor driving this difference being the large number of wine brands in total (50,000), and the large number available in an average supermarket (800) where an average consumer makes a wine choice relative to the small number the consumer recognizes. When consumers have this many choices, it is very difficult to develop brand loyalty.

The wine business, according to Mr. Huneus, has never been better. Sales and volume have increased significantly over the past few years and the quality of wine has improved dramatically over the past few decades. As advice and a challenge to students interested in entering the wine industry, he said that the hero of the future for the wine industry will be different from the hero of the past. Future heroes will be the people who can make wine more accessible to consumers by diminishing snobbery without eliminating wine's mystique.

The Liquid Sugars endowment was donated by Warren Mooney, co-founder of Liquid Sugars, an early distributor of corn fructose sweeteners. The endowment is intended to facilitate student and faculty interaction with agribusinesses in order to increase understanding of the important issues facing the sector today. The lectureship is one of its primary activities.

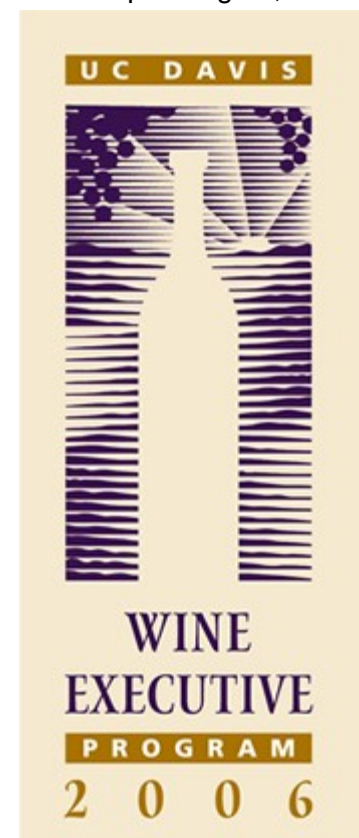
*Rachael Goodhue is an Associate Professor in the Department of Agricultural and Resource Economics at UC Davis and is the Director of the RMI Center on Wine Economics and Business*

## **UC Davis Wine Executive Program Attracts Globetrotting Attendees**

### **By Tim Akin**

The Graduate School of Management and the Department of Viticulture and Enology hosted 45 wine industry professionals at the sixth annual UC Davis Wine Executive Program in March in Sacramento. The program drew participants from as far away as Spain, New Zealand, Korea and Hong Kong.

The four-day professional development course focuses on the winemaking and management skills that are critical to success in the business and art of making and selling wine. The rigorous curriculum includes in-depth sessions on financial management, winemaking practices, marketing and branding, cost analysis and control, legal





issues, the latest grape and wine research, and operating modern wineries and vineyards.

Over the past six years, nearly 300 wine industry decision makers from across the U.S. and around the world have benefited from the program.

"We're very pleased at the response of this year's program—it was an overwhelming success," said Professor Robert Smiley, director of wine industry studies at the management school. "The attendees came from many different wineries, vineyards and related wine businesses. They enjoyed the sessions and the ability to network with each other. We're looking forward to next year's program."

Save the date for the 2007 UC Davis Wine Executive Program, which takes place March 4-8, 2007, in Sacramento, Calif. See [www.wineexecutiveprogram.com](http://www.wineexecutiveprogram.com) for more information.

*Tim Akin is the Director of Marketing and Communications in the Graduate School of Management at UC Davis*

## **Research\Faculty News**

### **The Foods for Health Initiative**

By Tu Jarvis

The University of California, Davis, is internationally recognized as a world leader in research related to food production, nutrition, toxicology and health. Building on this strength, the campus has embarked on an initiative entitled "Foods for Health" (FFH) to develop improved foods for humans and animals, as well as the dietary and health management practices that can optimize their use. This multidisciplinary effort has the potential to dramatically improve health, position the campus as the world leader in an area of fundamental importance, and attract major funding. The initiative will greatly enhance research, graduate and undergraduate teaching and outreach.



A campus task force developed the intellectual framework for the initiative a year ago; its report is available at [http://caes.ucdavis.edu/AcadProg/foods\\_for\\_health.htm](http://caes.ucdavis.edu/AcadProg/foods_for_health.htm). The FFH Initiative is based on a paradigm shift in how food and diet are viewed with respect to human health and well-being. Food is now seen as a complex mixture of dietary components whose impact on health is shaped by human genetic variation, and the history and the environment of individuals. This view places the emphasis on groups of individuals instead of populations and on the role of specific nutrients in promoting health and well-being throughout the lifespan. Diet acts most effectively to prevent diseases rather than to cure them. This realization demands a new focus using quantitative metabolic assessment to guide choices of foods and diets to improve health.

The FFH Initiative seeks to 1) determine the quantitative nutritional requirements needed to produce optimal metabolism and health in each individual, 2) produce a variety of foods richer in desirable dietary components, 3) develop mechanisms to determine, easily and inexpensively, those aspects of an individual's genotypes, phenotypes and health status that permit identification of appropriate, tailored dietary recommendations, and 4) convey these recommendations in a practical manner that allows individuals to benefit from those new foods. Success will improve our nation's health, while stimulating the demand for improved food products and health practices. The same principles that drive the development of improved

foods for humans will drive the development of improved new health management and dietary practices for animals.

Foods are not simply nutrient carriers, but provide a major part of life's pleasures. Individuals choose foods based on a complex interplay of personal preferences, cultural norms and economic means, among which health is just one element. Thus, if foods are to be genuinely healthier, they must also be delightful, convenient, affordable and safe. The integration of these various food and nutrition values requires an integrated, multi-disciplinary approach.

This initiative will link faculty from the School of Medicine, the School of Veterinary Medicine, the College of Agricultural and Environmental Sciences, the College of Biological Sciences, the College of Engineering, and scientists in the USDA Western Human Nutrition Research Center to create valuable synergies. It is supported by the deans and directors of the above units. We expect the initiative will subsequently draw on expertise in Letters and Science, Law, and the Graduate School of Management. The initiative will poise the campus to obtain significant new extramural funding in the rapidly growing area of Food and Health, and it should become a signature activity for UC Davis.

The FFH Initiative builds upon the great strength at UC Davis, including expertise that spans plant and animal genetics, engineering, nutrition, food science, health sciences and social sciences. Although UC Davis is uniquely endowed with excellent faculty engaged in research related to the initiative, these faculty have only recently begun working with a shared vision toward a common goal. The full potential of our research excellence in foods for health is yet to be realized.

The establishment of the FFH Initiative will provide a framework for the continuing evolution of a common vision as well as the means to achieve it. The initiative will include strong programmatic direction, core research resources, mechanisms to recruit key faculty to fill identified gaps, and to link existing and new faculty into a functional multidisciplinary and collaborative program that will span the Davis and Sacramento (medical school) campuses.

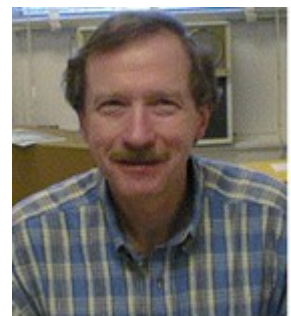
*Tu Jarvis is Associate Dean, Division of Human Sciences, College of Agricultural and Environmental Sciences and member of the RMI Executive Committee*

## **The Robert Mondavi Institute Center for Advanced Materials, Methods and Processing**

By John M. Krochta

Today's consumers want high-quality, healthful foods, and they want them produced with minimum impact on the environment. Achieving these goals requires a broad, creative and integrated approach that considers interactions among:

- food production factors (raw materials, water, energy and waste)
- food quality factors (including flavor, texture and nutrient content)
- long-term health benefits derived from the food



This is the approach being taken by the RMI Center for Advanced Materials, Methods and Processing (CAMMP).

The establishment of CAMMP was made possible by a \$50,000 start-up award from the College of Agricultural and Environmental Sciences through the RMI. The funds are designated to provide seed grants for new collaborative projects that cross departmental and disciplinary lines. Several new multidisciplinary collaborative research areas that have been identified within CAMMP represent synergy among faculty with expertise in:

- identifying food components and investigating their properties
- separating and creating novel and valuable food materials
- preserving foods using advanced techniques
- adding value to processing byproducts

The first projects and investigators awarded seed-grant funds by the RMI-CAMMP include:

- Flavor and Nutrient Release from Food Emulsions and Nanostructured Liquids
- **Stephanie Dungan**, Department of Food Science and Technology, and **Susan Ebeler**, Department of Viticulture and Enology

Understanding the factors that control retention and rate of release of flavors and nutrients from foods is essential to optimizing food flavor persistence and nutrient absorption. This project involves development of tools to study flavor and nutrient release from micro-scale droplets in food emulsions and nano-scale structures in food liquids.

- Identifying Wine Grape Pomace as a Possible Source of Bioactive Compounds
- **Alyson Mitchell**, Department of Food Science and Technology, and **Susan Ebeler**, Department of Viticulture and Enology

Wine and the grape pomace residue that remains after wine production have been shown to include bioactive compounds such as flavonoids and procyanidins that promote human health. This project examines the effect of grape variety and wine production practices on levels of these compounds in the resulting wine and in the pomace residue.

- Wine Pomace-Based Extrusion Products
- **Kathryn McCarthy**, Department of Food Science and Technology, **Linda Bisson**, Department of Viticulture and Enology, and **John Krochta**, Department of Food Science and Technology

The bioactive compounds studied in the project described above can be extracted from the wine pomace residue for adding to foods. This project investigates the use of extrusion (a high-pressure mixing and heating/cooking process) for combining wine-pomace extract with milk protein and grains to produce health-promoting snack food products and edible packaging materials.

- Formation of Reversible Nanopores on Foods for Incorporating Bioactive Compounds
- **Pieter Strove**, Department of Chemical Engineering and Material Science, **Diane Barrett**, Department of Food Science and Technology, and **Michael McCarthy**, Department of Food Science and Technology

Pulsed electric field (PEF) processing is a new technique capable of forming nanopores on food surfaces. This project examines the PEF conditions necessary for reversible formation of nanopores on food tissue, without damage to the food cellular structure, to incorporate food flavors and nutrients that improve food quality and nutritional value.

- Mass and Energy Balances in Food Preservation
- **Charles Bamforth**, Department of Food Science and Technology, and **Paul Singh**, Department of Biological and Agricultural Engineering

Many traditional methods of food processing do not make the most efficient use of raw materials, water and energy, and they may yield products with inherent instability. This project makes an integrated analysis of beer brewing as an example of a traditional process to build a predictive model for assessing mass and energy inputs for new alternative processes.

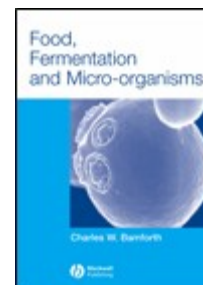
Among the beneficiaries of these new multidisciplinary efforts will be graduate students working on the projects who receive valuable education in disciplines relevant to environmental protection, food quality and healthfulness. The new information obtained in these seed-grant projects will increase opportunities for additional funding from sources such as the U.S. Department of Agriculture, the National Institutes of Health and the National Science Foundation which will allow even greater contributions from the outstanding faculty involved in the RMI.

*John Krochta, Professor and Food Engineer, is the Peter J. Shields Chair in Dairy Food Science and Director of CAMMP*

## **Food, Fermentation, and Micro-Organisms**

In his engaging style, Professor Charles Bamforth covers all known food applications of fermentation. Beginning with the science underpinning food fermentations, Professor Bamforth examines the relevant aspects of microbiology and microbial physiology, moving on to cover individual food products, how they are made, what the role of fermentation is and what possibilities exist for future development.

The book – Food, Fermentation, and Micro-Organisms – is available through Blackwell Publishing, [www.blackwellpublishing.com](http://www.blackwellpublishing.com).



## **People**

### **Patricia Glass joins the RMI**

The RMI welcomes Patricia Glass as the new administrative assistant to Executive Director Clare Hasler. Ms Glass spent the last five years as the finance manager at the UC Davis Robert & Margrit Mondavi Center for Performing Arts. Her position there enabled her to learn invaluable university resource information as well as play a key role in moving the department into their new buildings. Many co-workers, friends, and family were surprised she would leave the Mondavi Center...until they learned where she was moving to! She is a welcome asset to the RMI.





## Upcoming Conferences

**"From Farfel to Falafel: Food, Wine and Jewish Culture," will take place in the University Club at UC Davis Sunday evening, May 14 - Tuesday, May 16, 2006.**

The conference is sponsored by the [UC Davis Program in Jewish Studies](#) and the [RMI](#), with additional sponsorships from [The Judah L. Magnes Museum](#) in Berkeley, [The Koret Foundation](#), The Taube Foundation, [The Sacramento Jewish Federation](#) and [The Jewish Community Foundation of the West](#).

UC Davis is one of the premier institutions in the world for the scientific study of food and wine. With this conference, we hope to investigate the way food and wine function in a particular culture, that of the Jews, from biblical antiquity to the present day. We are particularly interested in the way food and wine function as bridges between high "literary" and popular cultures within the Jewish tradition and, in addition, as bridges between Jewish and other cultures.

Keynote speakers include Mollie Katzen, author of "The Moosewood Cookbook," and Joyce Goldstein, author of "Cucina Ebraica." In addition to scholarly sessions, there will be a number of hands-on activities including food sampling and wine tasting from the Hagafen Winery and Rosenblum Cellars, as well as a screening of the film, Divine Food: 100 Years in the Kosher Delicatessen Trade, by L. John Harris and Bill Chayes.

For more information, please go to the <http://jewishstudies.ucdavis.edu/fwjc/> Web site.



## Robert Mondavi Winery 40th Anniversary Event



The TASTE<sup>3</sup> experience includes a tribute to the Napa Valley's past, present and future with a grand finale celebration commemorating 40 years of innovation and great wines of the Robert Mondavi Winery. On Sunday, July 16, friends of the winery and TASTE<sup>3</sup> guests will fete the day ground was broken – July 16, 1966 – at the iconic Oakville winery, with food from local Napa Valley restaurants, wines from the winery's library, and live entertainment.

TASTE<sup>3</sup> is an invitation only event, but you are encouraged to request an invitation if you have not received one. For more information please go to <http://www.taste3.com>.

## **RMI in the news**

[CaliforniaWineWeb.com, March 23, 2006, Jim Gordon](#)

[WineReviewOnline.com, April 11, 2006, Patrick Comiskey](#)

[AppellationAmerica.com, March 27, 2006, Alan Goldfarb](#)

[AppellationAmerica.com, March 31, 2006, Alan Goldfarb](#)

[AppellationAmerica.com, April 18, 2006, Randall Grahm](#)

"RMI wine and food bytes: News from the cutting edge of wine and food science" is the newsletter of the Robert Mondavi Institute for Wine and Food Science at the University of California, Davis. It is distributed quarterly. Please feel free to share the newsletter with your colleagues in the wine and food sciences.