

CTAHR RESEARCH NEWS

May/June 2008
Volume 4, Issue 5



Greg Bruland collecting a soil core from a wetland site on the island of Hawai'i.

**Protecting
Hawaii's
watersheds**

Awards galore!

**CTAHR Centennial
celebration
continues**

In this issue

Protecting Hawaii's
watersheds... p 3

CTAHR's diverse
programs showcased... p 9

Symposium winners... p 11

Biofuel vs food debate p 12

OTTED's Matsunaga... p 13

Grants workshop... p 14

Research Calabash... p 15

Grants won... p 18

Student's win awards... p 19

New publications... p 20

New funding... p 21

From the Associate Dean and Associate Director for Research

It's hard to believe another semester is over! Since CRN will also take a summer vacation for the months of June and July, we have delayed our publishing date for the May issue to provide latest news on the new Farm Bill. The final language of the bill that came out of conference includes both ADAP and TSTAR programs. This means when the new Farm Bill is enacted, these two programs will no longer be considered Congressional special grants – although we will still have to continue working with our Congressional delegation to put money into these programs each year.

Dr. Greg Bruland is our featured story teller this month. Dr. Bruland is a relatively new faculty member in our Department of Natural Resources and Environmental Management (NREM). Although CTAHR is rooted in production agriculture, we have gradually added extensive research, teaching and extension programs in the natural resources and environmental management throughout the years. The department received its formal approval from the Board of Regents in January 2000. NREM faculty members who have graced the cover of CRN included Drs. Ali Fares (May 2006) and Chennat Gopalakrishnan (September 2007). Greg's research is in the areas of watershed management, land-based threats to coastal ecosystems, and wetland ecology, fulfilling CTAHR's mission to protect and enhance environment and Hawai'i's resources. Greg joined CTAHR in 2006, and has quickly established a very productive research program, publishing his research results, securing grant support, and mentoring graduate students. Dr. Bruland will emerge as a national leader in his expertise areas in the coming years. We are certainly pleased that we have Greg as a CTAHR

faculty to serve the needs of college and the state.

ORS Director Yaa-Yin Fong visited CTAHR twice last month to interact with our faculty and staff on proposal and grant related issues. Lisa Matsunaga from the Office of Technology Transfer and Economic Development (OTTED) presented a seminar to CTAHR staff this month. As one of four licensing associates in OTTED, CTAHR is Lisa's responsibility. She has prepared a short piece with links for information about OTTED and the services they provide and Lisa will also be making office visits to individual faculty members. Please contact Lisa to set up a meeting if you need additional information. We will continue to bring other guests to visit us in the fall semester.

You must have heard how the increasing food prices globally have triggered riots in several countries. To prevent hoarding, Wal-Mart and Costco have recently imposed limits on rice purchases. Corn-based ethanol has been implicated as a major contributor to the current food crisis. I have summarized the information available so far and links for your information.

Finally, Doug has assembled a collection of news-worthy items in the Calabash for your consumption. Have a well deserved summer vacation, everyone! CRN will also take a break for the summer. See you again in August!



C.Y. Hu
Associate Dean
and Associate
Director for
Research



CTAHR
Office of Research

College of Tropical Agriculture
and Human Resources
3050 Maile Way
Gilmore Hall 202
University of Hawaii at Manoa
Honolulu, HI 96822 USA
ph 808.956.4142
fx 808.956.9150
research@ctahr.hawaii.edu
www.ctahr.hawaii.edu

CRN staff
James R. Hollyer
Jackie Tani

Preventing Degradation of Hawai‘i’s Watersheds with New Technologies and Mauka to Makai Linkages

By Greg Bruland
Assistant Professor
Department of Natural Resources and Environmental Management



Sampling of water quality and fish community composition at Kanaha Pond on the Island of Maui. Pictured from left are NREM graduate students Meris Bantilan-Smith (Northshore, Oahu) and Dashiell Dunkell (Santa Cruz, CA), visiting sabbatical researcher Dr. Dharni Vasudevan (Bowdoin College), and Greg Bruland. Graduate students in the Bruland lab not pictured in this article include Noelani Puniwai (Hilo, HI), Carolyn Unser (Fairfield, CT), Gwen DeMent (Chicago, IL), Sandy Margrter (Charleston, SC), and Lesley Jantz (Yorktown, VA).

I can't think of a better place to conduct watershed-scale research than the Hawaiian Islands. Hawai‘i’s watersheds are relatively small, well-defined, and include a variety of land-use and climatic combinations. In these watersheds, the implementation of a best management practice (BMP) – such as a riparian buffer or sediment detention basin by a single landowner – may be detected at the watershed outlet in a relatively short time scale. In the massive Mississippi River watershed, on the other hand, it would be impossible to see the effect of a single landowner’s choice to

implement a BMP at the watershed outlet. Hawai‘i’s unique watershed characteristics provide a tremendous opportunity for research and collaboration with federal, state and private landowners. Although watershed managers and policy makers are now realizing the importance of addressing land-sea connections, native Hawaiians had figured this out hundreds of years earlier with their practice of the mauka (ridge) to makai (reef) ahupua‘a management system.

My research centers around the goal of ensuring a sustainable and healthy environment that extends from

mauka to makai across the watersheds of Hawai'i. I am interested in applying spatially- and temporally-explicit technology and advanced statistical techniques to soil and water conservation; watershed management; and coastal ecology and management in order to better manage watersheds and to protect coastal zones from the effects of agriculture, urbanization and feral ungulates. I believe that effective watershed management should utilize the latest developments in global positioning systems (GPS), geographic information systems (GIS), geostatistics, and visible near infrared (VNIR) diffuse reflectance spectroscopy (DRS). These technologies allow for research over larger scales and with greater resolution than has been previously possible. They will help us characterize the status and degradation of soil and water quality at the watershed scale, while also giving growers, landowners, managers, economists, and scientists powerful methods to identify critical source areas of sediment and nutrient loss, as well as optimal sites for best management practice implementation.

For further details and updates on this research please visit: www.ctahr.hawaii.edu/brulandg/. Some of my current research projects are described in more detail below.



NREM graduate student Chad Browning (Indianapolis, IN) and Greg Bruland working with our Visible Near Infrared (VNIR) diffuse reflectance spectrometer.



NREM grad student Chad Browning emptying a runoff collection bucket in Manoa Valley.

Emerging Technologies for Soil and Water Conservation in Hawai'i

An ongoing challenge for the state of Hawai'i is maintaining fertile soils against the backdrop of steep slopes, intense tropical precipitation, expansion of invasive biota and a diversifying agricultural economy. To address this challenge, I am developing visible near infrared diffuse reflectance spectroscopy (VNIR DRS) methods for rapid soil assessment. VNIR DRS is an exciting new technology that has the potential to revolutionize soil characterization by allowing for soil samples to be scanned quickly, inexpensively and non-destructively. The spectra produced from these scans can be related to various soil properties with the use of chemometric modeling. I envision this research leading to the development of a spectral library for the soils in Hawai'i and the greater-Pacific. This library will be used to develop predictive models that allow for scanning and measurement of a variety of properties such as soil carbon, CEC and texture. The data generated from these models can be incorporated into a GIS framework that will allow us to work over larger scales with greater resolution than has ever been previously possible. GPS will allow sites to be sampled repeatedly over time to investigate temporal changes in properties such as soil carbon. Integrating the processing capabilities of DRS within the spatially-explicit GIS and GPS context has tremendous potential to help growers, managers, and scientists characterize the status and degradation of soil and water quality at watershed scales. The scanning of Hawaiian soils with VNIR DRS is currently underway in my laboratory. I am also working with Drs. Sabine Grunwald, Nick Comerford, and Willie Harris (University of Florida) to develop spectral libraries and chemometric models for other subtropical areas of the U.S.

Innovative BMPs for Erosion Control and Water Quality Maintenance

Effective mauka to makai management of watersheds involves the identification of critical source areas of sediments and nutrients. Here in the forested areas of Mānoa Valley, feral pigs have been observed to disrupt the understory and litter layers, increase soil erosion, and alter nutrient cycling. Feral pigs not only cause significant onsite damages; they also cause serious offsite problems. For example, pig-derived sediments travel downslope and downstream during rain events and eventually are deposited in coastal areas. One study



A native plant growth experiment on coconut fiber coir logs at Mauka Campus. NREM graduate student Carolyn Unser is conducting her M.S. thesis work on this project.

estimated that as much as 75% of the sediments in the Ala Wai Canal originate from erosion in the forested areas of the Mānoa watershed (HI DoH 1993). To address this issue, **Dr. Carl Evensen (NREM)** and I are collaborating on a project funded by the USDA National Integrated Water Quality Improvement Program to assess the effects of feral pigs and fencing on erosion, runoff, and water quality in Mānoa Valley. Feral pig populations in Mānoa Valley have increased rapidly and been the subject of recent community meetings. While feral pig eradication and fencing programs have been carried out for decades in Haleakalā and Hawai'i Volcanoes National Parks, little research has been conducted in other Hawaiian watersheds to document the effects of feral pigs on water quality.

NREM graduate student **Chad Browning** established 8 paired fenced and unfenced runoff plots and sampled runoff during 4 storm events from November 2007–February 2008. Initial results revealed significant differences in mean total suspended solids (TSS) in runoff across the 4 months, with the greatest amounts occurring in February. Overall, at the majority of sites, TSS were higher in unfenced plots suggesting that feral pigs are increasing erosion and sediment transport in the Mānoa watershed. These results provide

some of the first quantitative information that can be used to help watershed managers formulate a response to feral pig activity. As the relationship between pigs and watershed damage becomes clearer, values can be assigned to policy instruments, such as fencing, in terms of avoided damages. Overall, this project provides a unique opportunity to quantify how feral pigs affect Hawaiian watersheds, examine management and policy options, and gain a better appreciation for the social, cultural and economic dimensions of this issue. Furthermore, feral ungulates are a concern not only in Mānoa but also in many other Hawaiian and Pacific Island watersheds.

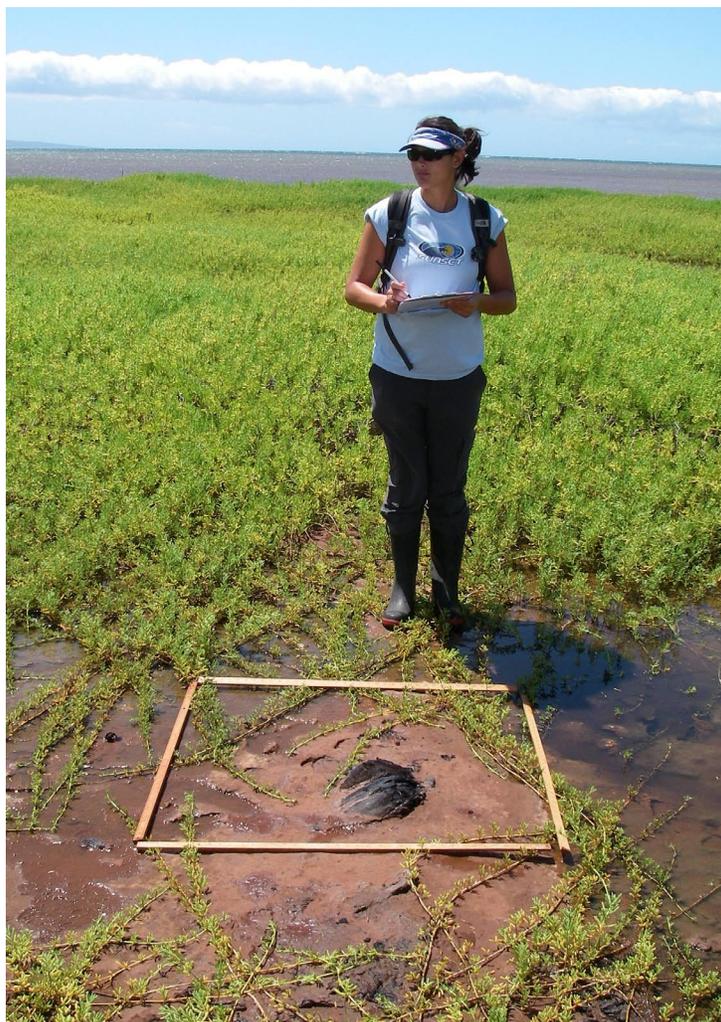
Streambank erosion is also a concern for Hawaiian watersheds as sediment loads increase exponentially during storm events, and much of this sediment ends up in coastal zones where it can have detrimental effects on coral reefs. A collaborative project with Andy Hood and Kristin Duin (Sustainable Resources Group International, Inc.), funded by the Department of Health 319 Clean Water Act Grant, involves the development of innovative practices for streambank erosion control. We are specifically investigating the effectiveness of installing coconut fiber coir logs planted with native riparian vegetative species in streams, in order to control erosion, take up nutrients, and provide habitat restoration. Coir logs have been used for erosion control in the continental U.S. but have not yet been tested in Hawai'i. NREM graduate student **Carolyn Unser** is conducting an experiment to test the growth and nutrient uptake of four native plant species under three nutrient levels. Based on this experiment, coir logs will be grown in a local greenhouse and

placed into two streams in Waimanalo to help provide erosion control, uptake nitrogen (N), and reintroduce native plants. If successful, this technique could be implemented in other streams statewide.

Coastal Lowland Wetlands: A Critical Land-Sea Linkage in Hawai'i

Much of the research in Hawai'i to date has focused either on terrestrial ecosystems, such as the wet and dry forests, or on marine ecosystems, such as coral reefs. In contrast, coastal lowland wetlands have received much less attention. This knowledge gap is problematic because coastal lowland wetlands serve as a vital linkage between terrestrial and marine ecosystems. Much of the water, sediment and nutrients generated and transported from terrestrial ecosystems will pass through coastal wetlands before making it to the ocean. Furthermore, coastal wetlands provide important ecosystem services such as storing floodwaters, trapping sediments and retaining nutrients. Coastal ecosystems in Hawai'i are under tremendous pressure, and the need for effective coastal zone management will only increase in this era of global climate change, sea level rise, and development.

Effective management needs to draw on baseline ecological data, however little if any data is available for Hawai'i's coastal wetlands. To address this need, I am currently leading an interdisciplinary team of researchers including Dr. Richard MacKenzie (USFS Institute of Pacific Islands Forestry), Adonia Henry (US Fish & Wildlife Service), and others on an EPA-funded project that compares the water quality and habitat functions of restored (RW), created (CW), and



NREM graduate student Meris Bantilan-Smith sampling vegetation at a coastal wetland on the island of Moloka'i.

natural (NW) coastal lowland wetlands in Hawai'i. The first phase of the project involved sampling vegetation, soils, water quality and fish communities of 40 wetland sites across the Hawaiian Islands.

An NREM graduate student, **Meris Bantilan-Smith** recently finished her M.S. thesis that focused on the vegetation and soil data from this project. Of the 102 plant species she identified across 40 sites, only 18 were native, indicating that most coastal lowland wetland sites in Hawai'i are highly impacted by invasive vegetation. She also determined that RWs and CWs had significantly higher bulk density (BD) and significantly lower soil organic matter (OM) than NWs. These differences have important implications for fertility, root penetration, plant growth and nutrient retention. Another NREM graduate student, **Gwen DeMent**, is comparing the phosphorus (P) sorption capacity of these wetland soils. To date, she has found significant differences in P sorption in RWs/CWs versus NWs.

The water quality results from this project revealed tremendous variability in physical and chemical parameters. We will continue to assess this variability with quarterly samplings at a subset of 20 sites over the next two years. Initial results of the fish community sampling indicated that, across each of the 5 main Hawaiian islands, greater than 80% of the fish biomass was comprised of invasive species. For some islands, no native fish species were observed at any sites. As these systems are highly impacted by invasive species, increased management, restoration and monitoring are needed. In July, I will be co-chairing a symposium at the 2008 Hawai'i Conservation Conference that is focused on the ecology and management of Hawai'i's coastal wetlands that will include speakers from Marine Corps Base Hawai'i, NRCS, USGS, USFS, Hawai'i Pacific University, National Tropical Botanical Garden, and UH Mānoa.

Finally, in order to help taro farmers more efficiently apply N-based fertilizers, **Dr. Jonathan Deenik (TPSS)**, myself and others are seeking funding to investigate the role of a previously-unknown component of the nitrogen (N) cycle – anaerobic ammonium oxidation or anammox – in Hawaiian taro ecosystems.

In Hawai'i, increasing demands for improved soil and water conservation, integrated watershed management, and mitigation of land-based threats to coastal zones will require interdisciplinary research

Greg Bruland



Hometown: Santa Cruz, CA

Joined CTAHR: 2006

Educational History: B.S. (1997) in Environmental Chemistry from Principia College; Ph.D. (2004) Wetland Ecology and Management, Nicholas School of the Environment and Earth Sciences, Duke University.

Specialization: Soil and Water Conservation and Coastal Ecology and Management

Current Work: Quantifying the effects of feral pigs on erosion, runoff, and water quality in Hawaiian forests; Evaluating the use of coir logs for streambank erosion control and native species propagation; Assessing the vegetation, soils, water quality, and fish communities of coastal lowland wetlands in Hawai'i; Calibration and validation of visible near infrared diffuse reflectance spectroscopy for rapid assessment of soil properties in Hawaii and other tropical and subtropical soils.

Languages Spoken: English

Selected Grants

Assessment and Monitoring of the Water Quality and Habitat Functions of Natural, Restored, and Created Wetlands of the Hawaiian Islands; *U.S. Environmental Protection Agency* - \$143,713.

Innovations in Stream Phytoremediation and Erosion Control of Degraded Stream Banks; *319 Clean Water Act Grant Fund* - \$200,000 (Bruland Subcontract \$63,502).

Rapid Assessment and Trajectory Modeling of Changes in Soil Carbon Across a Southeastern Landscape; *USDA/CSREES/NRI* - \$398,706 (Bruland Subcontract \$41,700).

Selected Publications

Bantilan-Smith, M., **Bruland, G.L.**, R.A. MacKenzie, C. McGuire, C. Ramsey, and A. Henry. An Assessment of the vegetation and soils of coastal lowland Hawaiian wetlands. In review with *Wetlands*.

Bruland, G.L. 2008. Coastal Wetlands: Function and Role in Reducing Impact of Land-Based Management. Chapter 5, In A. Fares and A.I. El-Kadi (Eds.), *Coastal Watershed Management*, WIT Press, Southampton, UK.

Bruland, G.L., C.J. Richardson, and S.C. Whalen. 2006. Spatial variability of denitrification potential and related soil properties in created, restored and paired natural wetlands. *Wetlands* 26:1042-1056.

and the strengthening of linkages between terrestrial and marine environments. I look forward to continuing to work with those in CTAHR, and beyond, to address these critical environmental challenges.

CTAHR Events Showcase Diverse Programs

By Doug Vincent
Special Program Director for Grants and Contracts

*Roy Yamakawa and Leiomi Bergknut
contributed to this story.*

The College of Tropical Agriculture and Human Resources prides itself on its diversity of programs. “Tropical Agriculture” – OK, we get that, and more about that later. But the “Human Resources” thing is so nondescript. Hiding within the “Human Resources” side of the equation is the Department of Family and Consumer Sciences (FCS). The FCS Department has two very distinct academic programs, Family Resources (FAMR) and Apparel Product Design and Merchandising (APDM). Every April, the APDM program has their annual fashion show – an event unique among CTAHR events, in that it is organized and run entirely by the students in the program. On April 27, APDM students proudly demonstrated their hard work at the “Absolute Fashion: All Bottled Up” annual fashion show held at the Sheraton Waikiki Hotel. Eleven senior student designers presented their work to the public in their show that featured three themes “Go Green,” “Barbie” and “Around the World.” The annual fashion show provides students with the experience, not only in showcasing their new clothing designs, but producing the entire show – from hiring the hall, finding an emcee (this year, KGMB’s Malika Dudley); organizing the program, hiring a photographer, dealing with the media and everything else. The media included a two article spread the Features section of the April 17, 2008 Honolulu Star-Bulletin. Read the articles here: <http://starbulletin.com/2008/04/17/features/story01.html> and <http://starbulletin.com/2008/04/17/features/story02.html>. The APDM faculty members, all nery and proud, sit back and watch it all unfold before their eyes. This year the eleven senior design students were **Sasha Dominy, Katie Greenway, Lauren Hayashibara, Courtnee Lee, Summer Holcomb, Samantha Rimsinth, Sayaka Yamagishi, Kiry Kravanh, Minako McCarthy, Alana Morton and Virginia Paresa**. We wish these wonderful designers great success in the future. We also congratulate all of the APDM students for a wonderful fashion show.



Just three of the outstanding fashions designed by CTAHR APDM students.



On two successive Saturdays, April 19 and 26, CTAHR hosted Centennial Celebrations, one at the Kauai Community College on April 19, 2008 and another at the Mealani Experiment Station on the Big Island on April 26, 2008.

On Kauai, the 13th Annual Kauai Garden Fair was co-sponsored by the Kauai County Farm Bureau and CTAHR. Over 34 vendors of garden products, along with government and private agencies affiliated with Kauai agriculture were present at the all day affair. The Garden Fair also featured a 4-H youth livestock show and auction. Special thanks go out to **Roy Yamakawa**, Kauai County Administrator and Kauai County faculty and staff, **Terry Sekioka**, **Laura Kawamura**, **Richard Ebesu**, **John Gordines**, **Jerry Ornellas**, **Frank Matsuno** and **Lou Nishida** for their hard work. Volunteers from the Kauai Family and Consumer Education group also helped with the fair. Off island CTAHR faculty and staff also participated with educational programs or helping with the 4-H livestock show: **Brian Bushe**, **Ted Radovich**, **Andy Reilly**, **Shu-Hwa Lin**, **Halina Zaleski** and Associate Dean/ Associate Director for Cooperative Extension, **Wayne Nishijima**, who welcomed the visitors. Approximately 2,500 people attended the Kauai Garden Fair.



Andy Reilly (FCS) surveying a visitor.



Kauai County faculty, Terry Sekioka (PEPS) and LauraJean Kawamura (FCS) welcoming visitors to the fair.

Halina Zaleski (HNFAS) judging Kauai 4-H lambs.



On the Big Island, CTAHR hosted its Centennial Celebration on April 26, 2008 at the Mealani Experiment Station in Kamuela. University of Hawaii Regent and former CTAHR Associate Dean for Academic and Student Affairs, **Marlene Hapai** welcomed the visitors. Hawaii County and Interim State 4-H Leader **Carol Ikeda** (FCS) was also acknowledged for her hard work and devotion to Hawaii's young people. Over 350 participants attended the fair which featured educational posters and displays, talks and demonstrations. Hawaii County Master Gardeners sold CTAHR seeds and Hawaii 4-H youth helped with the Germ City display. Tours of the blueberry, tea and protea plots, demonstrations of tea processing along with grass-fed barbecued beef highlighted the day. Special thanks go out to **Susan Miyasaka**, Interim Hawaii County Administrator, and **Milton Yamasaki**, Mealani Farm Manager and all the Hawaii County faculty and staff which made the day a huge success. Dean **Andrew Hashimoto**, Associate Deans and Associate Directors for Research and Cooperative Extension, **C.Y. Hu** and **Wayne Nishijima** along with many other CTAHR off-island faculty participated in the program. Space does not permit naming everyone who made this event so successful but our thanks to all who helped CTAHR celebrates its Centennial on the Island of Hawaii.

Needless to say, CTAHR's mission goes far beyond the classrooms and laboratories of the Manoa campus. From the runways of fashion world, to the gardens of the Garden Isle and to farm fields of Hawaii, CTAHR students, faculty and staff represent the University of Hawaii so very well.



UH Regent Marlene Hapai and CTAHR CARET representative H.M. "Monty" Richards of Kahua Ranch at the Mealani Centennial.



Carol Ikeda (FCS) in front of a poster on the NEW project.



Stuart Nakamoto (HNFAS) answering questions about tea production.

CTAHR announces top winners for the 20th Student Research Symposium

By Doug Vincent
Special Program Director for Grants and Contracts

One PEPS, two MBBE and one HNFAS students won the top prizes for the 20th Annual CTAHR Student Research Symposium held on April 11 and 12, 2008. **Michael Melzer**, a Ph.D. student in the Department of Plant and Environmental Protection Sciences won the best Ph.D. oral presentation award for his paper “**Development of Mexican lime plants for resistance to Citrus tristeza virus using post-transcription gene silencing.**” Mike’s co-authors were Wayne Borth, Stephen Ferreira, Diane Sether and mentor, John Hu.

Sandro Jube, a Ph.D. student in the Department of Molecular Biosciences and Bioengineering, won the award for best Ph.D. poster presentation. Sandro’s poster, with co-author and mentor Dulal Borthakur, was entitled “**Development of an Agrobacterium-mediated transformation protocol for the recalcitrant tree-legume *Leucaena leucocephala* using immature zygotic embryos.**”

The best oral presentation by a Master’s student was won by **Daniel Adamski**, Department of Molecular Biosciences and Bioengineering. Daniel’s presentation, “**Molecular phylogenetics and diversity of the Acacia koa complex based on DNA sequences**

and microsatellite markers,” was co-authored by Rudolf Fredua-Agyeman, Iris Teruya and mentor Dulal Borthakur.

The best poster presentation by an M.S. student was won by **Honfei He** of the Department of Human Nutrition, Food and Animal Sciences. Honfei’s poster, “**Induction of viable-but-nonculturable *Escherichia coli* O157:H7 in acidified broth and apple juice at refrigeration temperature,**” was co-authored by Jin Dong and mentor Yong Li.

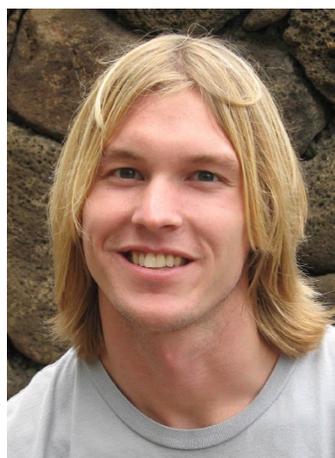
The winners earned travel grants to present their research at a national meeting. These weren’t the only winners, a list of other CTAHR Award winners, Gamma Sigma Delta awardees and Departmental winners can be found here: <http://www.ctahr.hawaii.edu/banquet/downloads/SymposiumAwardee.pdf>. To read more about these outstanding research projects, their abstracts in the program of the CTAHR Student Research Symposium are available here: <http://www.ctahr.hawaii.edu/symposium/downloads/2008%20SRS%20Program.pdf>. Congratulations to all the winners and participants in the CTAHR Student Research Symposium.



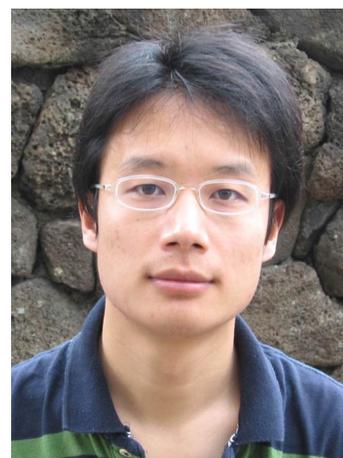
Michael Melzer



Sandro Jube



Daniel Adamski



Honfei He

Don't blame biofuel programs for soaring food prices

By C.Y. Hu

Associate Dean and Director for Research

Soaring food prices have been a hot topic in the media lately. From food riots in Haiti, Cameroon, Egypt, and Bangladesh to local stores such as Wal-Mart and Costco restricting quantity of rice each customer can purchase, all of a sudden, agriculture is back under the spot light. There has been a lot of media coverage to explain why food prices are soaring; however, many articles contain misleading information, and confuse readers even more. Many people pointing finger at the corn-based ethanol programs supported by the federal government and most state governments as the major contributor of the soaring food prices. Since CTAHR has made the development of biomass energy program one of our top priorities in our strategic plan, I would like to share with you some reading materials so that you can make an informed decision about the causes of high food prices.

Falling food prices, not soaring food prices, have been a problem for both governments and farmers. Farm work is back breaking, it's a difficult life style for many people, and it is economically risky. For those reasons, the U.S. continues to lose farmers. With higher food prices in the last two years, American farmers are finally able to make a decent return for their hard work. Although food prices are high today, they are still lower than the 1970's record high. American farmers have produced more corn, soybeans and wheat and exported more than last year. Therefore, production is not the problem. However, demand is another story. The growing middle class in the Latin America and Asia is demanding more animal protein in their diet and this has boosted the demand for more grains. Couple that with soaring oil prices, unfavorable weather conditions in parts of the world, and population increases, we have all the ingredients for a food crisis. Petroleum not only provides the transportation fuel, it also is the source of chemical fertilizers, pesticides, and insecticides. In my opinion, hiking oil price is the single most important contributing factor in this equation. The falling dollar has also contributed a great deal to the increased food prices. I have not heard too many people talking about the next point I am going to make: that is, speculations

by the commodity traders. As the stock market continues to slide, money managers are struggling to find opportunities to place their bets. Where else can you find a better place to hedge your investment than the agricultural commodities? Australia, a major wheat producer, has experienced severe drought, two years in a row, thus, reducing its production. This is the major contributor to the increased price of wheat and of bread. There were no production-related reasons for increase price in rice. Most likely, it is a trickle down effect from the increased prices in corn and wheat. Rice is such an important staple food for so many people, the rise in price caused the hoarding from the retailers all the way up to the wholesalers, and national policy changes in exporting countries. Because of the good wheat price, more farmers are planting more wheat, instead of corn, at this time. So, we should see a drop in wheat price next year. The market makes corrections.

Biofuel is an important source of energy that we should not and cannot afford to not pursue it. With continuing investment in cellulosic ethanol technology, we will be able to use various biomass products to produce the energy that is efficient and environmental friendly. Cutting back on bioenergy programs will be a mistake that we cannot afford at this time. We need to push for conservation, and cut our consumption on imported oil. OPEC and the big oil companies are the culprits of the current food crisis, not the corn-based ethanol programs. Here are some further readings on this subject:

25x25 is a national alliance to advance the goal of securing 25 percent of the nation's energy needs from renewable sources by the year 2025.

http://25x25.nonprofitsoapbox.com/storage/25x25/documents/PartnerContactDocuments/25x25_sc_statement-jec%20hearing_5-1-08.pdf

http://25x25.nonprofitsoapbox.com/storage/25x25/documents/PartnerContactDocuments/25x25food_fuel_messages_05-01-08.pdf

Analysis of the Efficiency of the U.S. Ethanol Industry 2007. May Wu; Center for Transportation Research, Argonne National Laboratory
http://www.ethanolrfa.org/objects/documents/1652/2007_analysis_of_the_efficiency_of_the_us_ethanol_industry.pdf

What You Need to Know About Energy. National Academy of Science.
http://books.nap.edu/catalog.php?record_id=12204&utm_medium=email&utm_source=National%20Academies%20Press&utm_campaign=New+from+NAP+5.06.08&utm_content=Downloader&utm_term=

Is Ethanol Getting a Bum Rap? Business Week.
http://www.businessweek.com/magazine/content/08_19/b4083060454256.htm

The Effects of Ethanol on Texas Food and Feed. Texas A&M University.
<http://www.afpc.tamu.edu/pubs/2/515/RR-08-01.pdf>

Food vs. fuel a global myth. Chicago Tribune.
<http://www.chicagotribune.com/news/opinion/chicoped0506fuelmay06,0,481881.story>

Meet OTTED's Lisa Matsunaga

Lisa Matsunaga is a Licensing Associate with the Office of Technology Transfer and Economic Development (OTTED) responsible for taking care of CTAHR faculty and staff. Lisa helps CTAHR faculty, staff and students manage, protect and commercialize new technologies so they can be brought to market for the benefit of society and to support economic growth in our local and national economies.

OTTED supports the research enterprise throughout UH, helping protect UH-developed technology, and licensing those technologies to industry to support the transfer of new technology and ideas from the University to the community-at-large. Of particular interest to CTAHR faculty – in addition to working with ordinary patentable inventions, copyrights, and tangible research property – OTTED also handles plant patents and plant variety protection certificates. Plant patents give breeders rights to novel asexually reproduced plants (not including tuber-propagated plants), and plant variety protection certificates cover new, distinct, uniform, and stable sexually-reproduced or tuber-propagated plant varieties.

Lisa also works with CTAHR researchers to help them develop and foster mutually rewarding, long-term relationships with industries. She is responsible

for negotiating research projects sponsored by private companies using their own funds or federal funds through the SBIR/STTR programs. Lisa also helps faculty collaborate with other researchers by reviewing and approving material transfer agreements for research materials going to and coming from other research institutes and private firms, and non-disclosure agreements which protect the confidentiality of proprietary research and commercial information.

If you have any questions relating to intellectual property matters or new discoveries or inventions that may be of interest to industry, please contact Lisa at 539-3826 or email her at matsunag@hawaii.edu. There is also valuable information on OTTED's webpage at www.otted.hawaii.edu.



Lisa Matsunaga

Possible grant workshop topics?

By Sharee Pepper
Grants Specialist

As our current sources of funding disappear and extramural grant opportunities are becoming increasingly competitive, we are looking for ways to help CTAHR faculty write more successful grant applications. We know you are all busy so it is important to maximize your efficiency by learning what issues related to grant writing you are most interested in learning, what types of programs would best suit your learning styles and what times would be the most convenient. We need this information before scheduling future mini workshops or a series of discussion sessions.

1. Would you attend one or more sessions on various topics related to developing, writing and submitting successful grant applications? If so, when would be the most convenient times and dates?

- a) A series of lunch time brown bags one hour per week for a month, a couple times a year?
- b) A series of two hour workshops scattered throughout the semester?
- c) A one day workshop sometime in late summer or between semesters?
- d) Any other suggestions?

2. What topic(s) would you be interested in getting updates on?

- a) Compliance issues such as Biohazards, Recombinant DNA, Animal use, or Human Subjects (including exemptions, just-in-time);

- b) How to develop a realistic budget (cost sharing, % effort, indirect costs);
- c) Navigating the ORS requirements (including Forms 5, 5a, 5b), new sub-award/sub-recipient requirements;
- d) Grants, Contracts and Cooperative Agreements – It's not just about the money;
- e) Reading the RFAs, RFP, PAs (how they differ and how to read between the lines);
- f) Making a compelling case and incorporating stakeholder input;
- g) How will you know you are successful? Evaluation (including the Logic Model, measurable outputs and outcomes/impacts);
- h) Electronic submissions with grants.gov (common problems, solutions?);
- i) Thinking like a reviewer (what works for them and how to avoid the most common mistakes);
- j) Success stories from CTAHR grant recipients; what worked for them?
- k) Internal and local funding updates and projections;
- l) Foundations and Non-profits;
- m) Other suggestions?

Your comments, suggestions, thoughts, or silence will determine how we proceed. Please send your input, as well as any other related thoughts, to spepper@hawaii.edu by May 30th. Thanks!

The research calabash

By Doug Vincent
Special Program Director for Grants and Contracts

UH Seeking Applicants for Leadership Program
President David McClain is seeking applicants to join the second cohort of the **President's Emerging Leaders Program**. The next cohort will begin work on August 5, 2008. All Faculty and Staff are encouraged to apply. The program is seeking individuals who exhibit the attitude and capacity necessary for effective leadership within the UH academic community. **Applications are due May 30, 2008**. Go here for more information and to download applications: <http://www.hawaii.edu/ovppp/Leaders/>. If potential applicants would like Dean's office support letters, please contact individuals as soon as possible.

CTAHR Annual Accomplishment Report Approved by USDA CSREES

Dean **Andrew Hashimoto** received word on May 6, 2008 that the **USDA CSREES Hawaii Combined Research and Extension Annual Accomplishment Report** was reviewed and accepted by the agency. CTAHR receives Hatch, McIntire-Stennis and Smith-Lever formula funds each year to support its research and extension programs. The legislation authorizing the formula funds stipulates that each year CTAHR must submit an Annual Report of Accomplishments based upon a previously approved Plan of Work. You can read the combined annual report here: http://www.ctahr.hawaii.edu/vincent/Hawaii_2007_Combined_Research_Extension_Annual_Report.pdf. Associate Dean/Associate Directors **C.Y. Hu** and **Wayne Nishijima** take the responsibility for preparing each part of the report emphasizing accomplishments in research and extension, respectively. The reports are reviewed by CSREES and compared with our current Plan of Work. You can read the response by CSREES here: http://www.ctahr.hawaii.edu/vincent/CSREES_Annual_Report_Review_Report.pdf.

Western Sustainable Agriculture Research and Educations Grants RFPs now open.

The USDA CSREES regional program, Western Sustainable Agriculture Research and Education is

now seeking proposals for its portfolio of funding opportunities. The Research and Education Grant pre-applications are due **June 13, 2008**. For more information about this program, go here: http://wsare.usu.edu/grants/docs/RFPRE_RE.pdf. For other opportunities, see the WSARE web site here: <http://wsare.usu.edu/grants/>. Western SARE administrators, **Phil Rasmussen** and **Jim Freeburn** have produced an 11-minute on-line video on the elements of a successful Western SARE proposal: <http://wsare.usu.edu/grants/?sub=wsv2>. For more information about Sustainable Agriculture in the West, visit the WSARE web site: <http://wsare.usu.edu>.

Western SARE Graduate Student Grants due May 30, 2008

Graduate students working in sustainable agriculture are eligible for Western Sustainable Agriculture Research and Education Grants (SARE). Grants up to \$25,000 for up to two years are available. Both M.S. and Ph.D. students are eligible. **Applications are due May 30, 2008**. To download application materials, go here: http://wsare.usu.edu/grants/docs/RFA_GS.pdf

CTAHR Forms Ecosystem Services Working Group

Ecosystem Services are the benefits that people obtain from nature. USDA CSREES has proposed an ecosystem services research portfolio to address the link between ecosystem services and human well-being. To capitalize on this potential new funding source as well as other opportunities, CTAHR has organized an Ecosystem Services Working Group to better position itself as funding opportunities becomes available. Island ecosystems are, by their nature, inherently fragile. Hawaii is also blessed with 11 of the 13 climatic zones of the world: each with its own unique ecosystems, and each one presenting different challenges toward the preservation of the services it provides to Hawaii's citizens. Simply put, our environment provides for unique research opportunities for multi-disciplinary research programs. Without staking stock of what we can or cannot do, we won't be able to respond effectively to these opportunities. If you are interested in joining

the working group or would like more information, please contact **Doug Vincent** by e-mail at vincent@hawaii.edu and indicate your interest. We will add you to the mailing list. To download our first attempt to develop common themes within CTAHR, go here: http://www.ctahr.hawaii.edu/vincent/CTAHR_Ecosystem_Services_Common_Themes.pdf.

Office of Technology Transfer and Economic Development Presentation

On May 8, 2008, Ms. Lisa Matsunaga, Licensing Associate for the UH Office of Technology Transfer and Economic Development (OTTED), met with CTAHR faculty and staff. Lisa is responsible for working with CTAHR faculty and staff on invention disclosures, material transfer agreements and other items related to intellectual property. The presentation evoked a lively discussion. If you'd like to review Lisa's PowerPoint presentation about OTTED, go here: http://www.ctahr.hawaii.edu/vincent/OTTED_CTAHR_May_2008.pdf.

Lisa also provided two handouts – one outline more specific information about doing invention or discovery disclosures to the University of Hawaii: http://www.ctahr.hawaii.edu/vincent/UH_Invention_Discovery_Disclosure.pdf. Another handout, particularly important to those working in a laboratory, is about the importance of keeping a laboratory notebook to the invention or discovery disclosure process. It is important to keep information pertaining to work in a laboratory, and this handout summarizes what is necessary in a laboratory notebook to prove one's discovery. Go here to read about it: http://www.ctahr.hawaii.edu/vincent/The_Laboratory_Notebook.pdf.

CTAHR eXchange is back

CTAHR eXchange is back online. Go here: www.ctahr.hawaii.edu/cs to read the blogs. There are two blogs currently available: "Sustainable Agriculture" http://www.ctahr.hawaii.edu/CS/blogs/sustainable_agriculture/default.aspx and to download the CTAHR Research News blog, go here: http://www.ctahr.hawaii.edu/CS/blogs/ctahr_research_news/default.aspx. This summer we will also re-activate the forums in an attempt to create more discussion. Stay tuned. If you have interest in hosting a blog, contact **Doug Vincent** at vincent@hawaii.edu for more information.

News from UH Graduate Division

Graduate Division reports that effective Summer 2008, there will be a new form for Plan B Master's students. The draft form has been distributed to Graduate Chairs. Graduate Division has also changed the name of the progress forms. Form I is now called "Pre-candidacy Progress." The old Form II is now called "Advancement to Candidacy" and the old Form III is now called "Thesis/Dissertation Evaluation." In addition, the look of the Graduate Division web site has changed – new features have been added. Go here for the new UH Graduate Division web site: <http://www.hawaii.edu/graduate/>.

CTAHR Faculty Win Western SARE grants

Two CTAHR faculty members received Western SARE grants recently. **Dr. Koon-Hui Wang**, Assistant Researcher in the Plant and Environmental Protection Sciences (PEPS) received a Research and Education grant from the Western SARE program for \$159,699, entitled "Using Sunn Hemp and its Allelopathic Compounds as a Sustainable Option." **Dr. James Leary**, Assistant Researcher, also from PEPS, received \$53,768 in funding for his Professional Development Program Grant entitled "Promoting Adaptive Management with "Tropic Sun" Sun Hemp (*Crotalaria juncea*) in Hawaii for Ecological Strategies in Weed Control, Nematode Suppression and Nutrient Management." **Volcano Island Honey Company** also received a Western SARE Farmer-Rancher grant entitled, "Healthy Foundation, Health Bees: Making Organic Wax Foundation for Beekeepers."

MBBE's J.P. Bingham featured on Australia's "60 Minutes"

CTAHR's Assistant Professor **Dr. Jon-Paul Bingham** of the Molecular Biosciences and Bioengineering (MBBE) Department was featured recently on Australian TV's "60 Minutes" regarding his research on cone snail venom and its medical applications in pain relief. Its part of story along with **Ruud Kleinpaste**, of TV's Animal Plant program "Buggin' with Ruud," about how insects and other creatures can provide new ways to treat human diseases. View the video here: <http://video.msn.com/video.aspx?mkt=en-us&vid=17d71da0-c931-4ad3-9d0b-11a57b49aa23>. (The video begins after a short advertisement).

ARCS Honors TPSS Faculty Member and MBBE Graduate Student

The Honolulu Chapter of the Achievement Rewards for College Scientists has honored a TPSS faculty member and an MBBE Graduate Student. **Dr. Adelheid Kuehnle**, Horticulturalist in the Department of Tropical Plant and Soil Sciences, was named the 2008 ARCS Scientist of the Year. MBBE Graduate Student **Andrea Blas** won the ARCS Award in Tropical Agriculture for her research on the molecular genetic basis of color in papaya. Congratulations to them both.

Grant Writing for Graduate Students

ANSC/FSHN/TPSS 657 Grant Writing for Graduate Students will be offered again Fall Semester 2008. Registration is restricted to CTAHR graduate students. The course is a 1 CR class that meets on Tuesdays at 12:00 – 1:15 pm. The class fills up early. Contact **Doug Vincent** at vincent@hawaii.edu for more information.

Grant Coaching Available Now

The CTAHR Office of Research is offering **grant coaching support** for individuals or small groups who are currently writing grants that have indirect cost returns. We are using RTRF funds to pay for this pilot program; therefore, it is important that we invest in opportunities that result in a return to that investment. Indirect cost returns provides CTAHR, college units and PIs (that generate the RTRF) with additional, highly flexible funding that can be used to support and expand research programs. We hope that by increasing our success rates in obtaining competitive grants, we will have greater direct and indirect costs to support our research activities. So if you are currently writing grants (or you plan to write a proposal) and want help developing, polishing and refining your proposal to meet an upcoming deadline, contact CTAHR grants specialist, **Sharee Pepper** at 956-8140 or by e-mail at spepper@hawaii.edu.

New Hawaii Department of Agriculture Web Page

The Hawaii Department of Agriculture has introduced its new web page. Go here to view it: <http://hawaii.gov/hdoa>. The site is much easier to navigate and is well organized. Visit our agricultural partner in the state government.

Dates and Events – Mark Your Calendars Today

CTAHR Maui County Centennial Event – June 14, 2008

Maui no ka oi! The CTAHR Maui County Centennial Celebration will be held in conjunction with the **June 14-15, 2008** Maui Up-Country Fair at the Eddie Tam Community Center at Makawao. The Maui 4-H Championships will also be there. Stay tuned for more details.

Agroterrorism Training Offered – Awareness and Preparedness.

The Western Institute for Food Safety and Security and the University of California-Davis will be offering two courses on Agroterrorism to be held on **July 23-24, 2008 in Honolulu**. The free training will build awareness of the threat agroterrorism places on our food supply. The workshop is co-sponsored by the U.S. FDA and the Hawaii Department of Agriculture. The first course “**Understanding the Dangers of Agroterrorism**” will be held on **Wednesday, July 23, 2008 from 8:00 am- 12:30 pm** and will be repeated on **Wednesday, July 23, 2008 from 1:00 pm- 5:00 pm**. The second course, “**Principles of Preparedness for Agroterrorism and Food Systems’ Disasters**” is from **9:00 am- 4:00 pm on Thursday, July 24, 2008**. Both courses are free of charge and lunch will be provided at no cost. But you must register for the courses. To do so, go on-line at <http://wifss.ucdavis.edu/agroterrorism/classes/classesbydate.php>, scroll down to the Honolulu courses, click on “Flyer” and a specific flyer will come up for each individual course. Enrollment is limited so register soon. The courses will be held at **1132 Bishop Street, Room 306** in downtown Honolulu.

Hawaii State Farm Fair – July 26, 27, 2008

This year the **Hawaii State Farm Fair** will be held on the grounds of Bishop Museum, **July 26-27, 2008**. After two years out in Kapolei, the Farm Fair will be back in town, featuring agricultural displays, a 4-H livestock show and auction, a farmer’s market, orchid and plant sales. Volunteers are needed to assist with the fair. For more information see the Farm Bureau web site at www.hfbf.org or call 874-2074.

Statewide Agriculture Conference Scheduled for September 4, 2008.

CTAHR, the Hawaii Farm Bureau, the Agricultural Leadership Foundation of Hawaii and the Hawaii Department of Agriculture will sponsor a state-wide

agriculture conference “**Growing With Intention**” on **Thursday, September 4, 2008**. “All Ag Day for Ag” will be held at the Hawaii Convention Center. Statewide commodity groups will be encouraged to meet on Friday, September 5, 2008. Mark your calendars today and stay tuned for more information. The web site is here: <http://www.agconference.org/> but has not yet been updated for the 2008 Conference. Or go here for more information: http://www.agleaderhi.org/pdfs/AgConf08_SaveDate.pdf

Western Sustainable Agriculture Research and Education Workshop in Kona, September, 23-24, 2008.

The Outrigger Keauhou Beach Resort will be the home of the **USDA Western Regional Sustainable Agriculture Research and Education (SARE)** workshop scheduled for **September 23-24, 2008**, at the Outrigger Keauhou Beach Resort: For more information about the conference, go here <http://www.ctahr.hawaii.edu/sustainag/Conferences.asp>. To make reservations, contact the Outrigger Keauhou Beach Resort here: <http://outrigger.com/hotels-resorts/hawaiian-islands/hawaii-big-island/keauhou-beach-resort>. There will be two other conferences after the Western SARE meeting at the Outrigger Keauhou. There will be a Farmer-Chef Conference, entitled “Partnerships for Sustainable Local Food Production,” on September 24, 2008 and/or September 25, 2008 and the 18th Annual Hawaii Tropical Fruit Growers Conference will be on September 26-27, 2008. Visit the HTFG web site for more information: <http://www.hawaiitropicalfruitgrowers.org/index.html>. (Conference info not yet uploaded).

Mealani’s “A Taste of the Hawaiian Range” – Friday, October 3, 2008

The Hilton Waikoloa Village Grand Ballroom will once again host CTAHR’s **13th Annual Mealani’s A Taste of the Hawaiian Range Food Festival** on **Friday, October 3, 2008 at 6:00 pm**. CTAHR, in partnership with the Hawaii Cattlemen’s Association, and the Big Island Farm Bureau, will host the “premier foodie event” in Hawaii, featuring island-grown meats, vegetables and other locally-grown foods. Mark your calendar and go to the web site for more information: <http://www.ctahr.hawaii.edu/taste/index.asp>. Time for grind!!

Has the grants well dried up? Disappointing results in FY 2008

By Doug Vincent
Special Program Director for Grants and Contracts

This month CTAHR faculty and staff received only two grants, one for Mike Kawate of PEPS (\$7,000) and one for J.-P. Bingham of MBBE (\$48,925). This represents the fewest number of grants received in any edition of the CTAHR Research News. With less than 7 weeks to go in the fiscal year, we might end the fiscal year with less than \$10 M in extramural contracts and grants. The lowest number since 1998 when we received \$7.25 M in grant funding. So far this year, CTAHR has received 92 awards for \$9.153 M. If things continue like this for the FY 2008 state fiscal year, we will be less than half of what we brought in the last fiscal year in a total amount of funding but also significantly fewer awards. So not only fewer dollars but also fewer awards received. It’s been a disappointing year, no question. Once the fiscal year closes out, the Office of Research will do a detailed analysis of what happened in FY 2008 and report the results to you in the July-August edition of the CTAHR Research News. Let’s all plan for greater success next year!

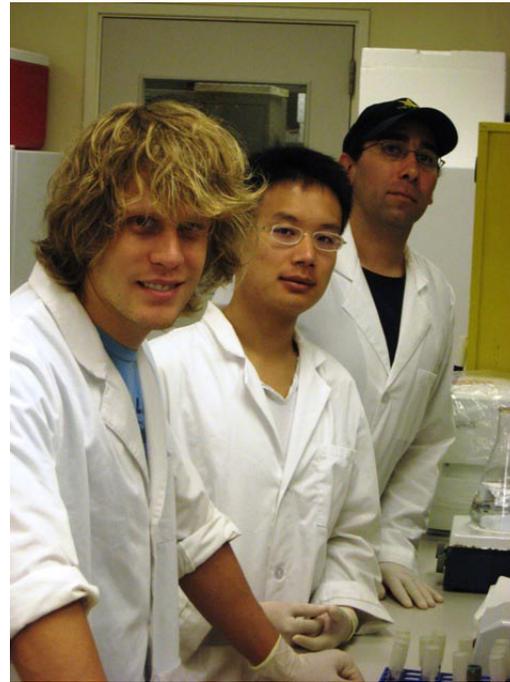
Food microbiology students earn awards

Dr. Yong Li's food microbiology laboratory in the Department of Human Nutrition, Food and Animal Sciences has had a very good year as three of Dr. Li's students have won awards this semester.

Hongfei He won the Best M.S. Student Poster Presentation in the CTAHR Student Research Symposium. Hongfei's paper was entitled "Induction of Viable-but-Nonculturable *Escherichia coli* O157:H7 in Acidified Broth and Apple Juice at Refrigeration Temperature."

M.S. graduate student David F.E. Pirazzini and Hongfei made oral presentations in the Graduate Student Paper Competition in the American Society of Microbiology Hawaii Branch Meeting. Competing with graduate students from the Departments of Microbiology, Tropical Medicine and Medical Microbiology, Oceanography, Hawaii Institute of Marine Biology, and CTAHR's MBBE, David Pirazzini took 1st Place in the Master's Student Oral Presentation. David's presentation was entitled "Culture-Dependent and Culture-Independent Approaches for Determining Lactic Acid Bacteria Diversity in Poi." David won a \$250 cash award and his poster also won HNFAS' Best Graduate Student Poster at the CTAHR Student Research Symposium.

In another competition, undergraduate student Alfred Lee Castro was offered an Undergraduate Summer Research Award by the Office of the Vice Chancellor for Research. According to Dr. Harold



David Pirazzini, Hongfei He, Alfred Lee Castro (l-r)

McArthur, Assistant Vice Chancellor for Research Relations, Lee's proposal was ranked among the best out of 35 applications by a panel of seven faculty reviewers. Lee will receive a \$2,915 research stipend to conduct research this summer investigating "Microbial Spoilage of Fresh Tuna During Refrigeration."

Congratulations to these HNFAS students and to Dr. Li for his outstanding mentorship.

New publications

Richard Criley (TPSS)

Criley, R. A. (Editor). 2008. *Ornamentals, Now! Acta Horticulturae* 766, Intern. Soc. Hort. Sci. Leuven, Belgium. 512 pg. (67 papers from a symposium held during the 2006 International Horticultural Congress in Seoul, Korea).

Criley, R. A., K. W. Leonhardt, D. Oka, P. N. Shingaki. 2008. Extending the flowering period of *Leucospermum* hybrids through disbudding. *Acta Hort.* 766:183-186

Criley, R. A., M. S. Roh, M. Kikuchi, and R. M. Manshardt. 2008. A comparison of *Gardenia augusta* cultivars using isozymes and RAPD markers. *Acta Hort.* 766:461-468

Kenneth Grace (PEPS)

Campora, C. and J. K. Grace. 2007. Behavioral response of the Formosan subterranean termite to borate treated wood. *Proc. of the Hawaiian Entomological Society* 39: 127-137.

Grace, J. K., J. R. Yates III, M. Aihara-Sasaki, G. Lillich. 2007. Community education for better termite control in Hawaii. *Proc. of the Hawaiian Entomological Society* 39: 139-142.

Gentz, M. C. and J. K. Grace. 2006 (publ. April 2008). A review of boron toxicity in insects with an emphasis on termites. *Journal of Agricultural and Urban Entomology* 23(4): 201-207.

Husseneder, C., J. E. Powell, J. K. Grace, E. L. Vargo and K. Matsuura. 2008. Worker size in the formosan subterranean termite in relation to colony breeding structure as inferred from molecular markers. *Environmental Entomology* 37: 400-408.

Kirschenbaum, R. and J. K. Grace. 2008. Agonistic interactions among invasive ant species from two habitats on Oahu, Hawaii. *Sociobiology* 51: 543-553.

Kirschenbaum, R. and J. K. Grace. 2008. Agonistic responses of the tramp ants *Anoplolepis gracilipes*, *Pheidole megacephala*, *Linepithema humile*, and *Wasmannia auropunctata* (Hymenoptera: Formicidae). *Sociobiology* 51: 673-683.

Woodrow, R. J., and J. K. Grace. 2007. Efficacy of localized chemical treatments for *Cryptotermes brevis* (Isoptera: Kalotermitidae) in naturally infested lumber (summary). *Proc. of the Hawaiian Entomological Society* 39: 149-152.

Woodrow, R. J. and J. K. Grace. 2008. Termite control from the point of view of the termite. In *Development of Commercial Wood Preservatives: Efficacy, Environmental and Health Issues* (T.P. Shultz, H. Militz, M.H. Freeman, B. Goodell and D.D. Nicholas, Eds.). *American Chemical Society Symposium Series* 982. Pp. 256-271.

Creighton Litton (NREM)

Litton, C.M. and Kauffman, J.B. 2008. Allometric models for predicting above ground biomass in two widespread woody plants in Hawaii. *Biotropica* 40: 313-320.

Shu-Hwa Lin (FCS)

Lin, S. (2008). An examination of organic cotton in the Hawaii market: Visitors vs. residents. *Taiwan Textile Research Journal*. 18(2), 45-54.

Lin, S. (March-June 2008). Chinese court dress design principles. *Context*, 15, 12-15.

Russell Messing (PEPS)

Wang, X. G & R. H. Messing. 2008. Role of egg-laying experience in avoidance of super-parasitism by the fruit fly parasitoid *Fopius arisanus* (Hymenoptera: Braconidae). *Annals of the Entomological Society of America* 101: 656-663.

McQuate, G. T, A. H. Bokonon-Ganta, E. B. Jang & R. H. Messing. 2007. Age of response of male *Bactrocera latifrons* (Diptera: Tephritidae) to -ionol + cade oil relative to age of sexual maturity. *International Journal of Tropical Insect Science* 28: 12-18.

Tomoaki Miura (NREM)

Miura, T., Yoshioka, H., Fujiwara, K., & Yamamoto, H. (2008). Inter-comparison of ASTER and MODIS surface reflectance and vegetation index products for synergistic applications to natural resource and environmental monitoring. *Sensors*, vol 8, p 2480-2499.

Miura, T., Huete, A. R., Ferreira, L. G., Sano, E. E., & Yoshioka, H. (2008). A technique for reflectance calibration of airborne hyperspectral spectrometer data using a broad, multi-band radiometer. In M. Kalacska (Ed.), *Hyperspectral Remote Sensing of Tropical and Sub-tropical Forests* (pp. 218-232): CRS Press (invited).

Huete, A. R., Kim, Y., Ratana, P., Didan, K., Shimabukuro, Y. E., & Miura, T. (2008). Assessment of phenologic variability in Amazon tropical rainforests using hyperspectral Hyperion and MODIS satellite data. In M. Kalacska (Ed.), *Hyperspectral Remote Sensing of Tropical and Sub-tropical Forests* (pp. 233-260): CRC Press (invited).

Susan Miyasaka (TPSS)

Xiaoling He, Susan C. Miyasaka, Maureen M. M. Fitch, Paul H. Moore, Yun J. Zhu (2008). Agrobacterium tumefaciens-mediated transformation of taro (*Colocasia esculenta* (L.) Schott) with a rice chitinase gene for improved tolerance to a fungal pathogen *Sclerotium rolfsii*. *Plant Cell Rep* (2008) 27:903–909.

Jinzeng Yang (HNFAS)

Wu Z, Li Z, Yang J. 2008. Transient transgene transmission to piglets by intrauterine insemination of spermatozoa incubated with DNA fragments. *Mol Reprod Dev*. 75:26-32.

Suzuki ST, Zhao B, Yang J. 2008. Enhanced muscle by myostatin propeptide increases adipose tissue adiponectin, PPAR-alpha, and PPAR-gamma expressions. *Biochem Biophys Res Commun*. 369:767-773.

New funding opportunities

By Doug Vincent

Special Program Director for Grants and Contracts

Following is a lengthy list of potential funding opportunities that I hope you will browse through and find one that will fit your needs. Remember, Aesop's fable about the Ant and the Grasshopper? The ant works all summer long, building his house and laying up supplies for the winter, while the grasshopper laughs and plays the summer away. Come winter, the ant is warm and well fed. The grasshopper, however, has no food or shelter and has to beg the ant for charity. So visualize with me: think ant, not grasshopper. They say that the time to be writing grants is not when you really need the money – if you need the money now, it's too late. The time to write grants is when you have funding but are anticipating its end. Use the summer to write your proposal.

While we are optimistic that TSTAR, Floriculture, and other special grants will be funded next year, we don't know the future of these programs. With the election

year politics, it's doubtful that we will have a new federal budget until well into 2009, after the election and likely after the inauguration of the new President. All three Presidential candidates have expressed their dislike for earmarks. Summer is the time to review previous RFPs that fit your needs and develop the framework for new proposal NOW, when you have the time. Are there collaborations that you need to develop? Are there preliminary data to organize to include in a new proposal? What information do you need to build that compelling case for your proposal? If you submitted a proposal last year that was unsuccessful, what were the points of concern and how can you address them for a new submission? Do you have a first draft of a proposal that didn't quite get submitted last year? Ask a colleague to review it or check with Sharee Pepper, CTAHR's grant coach, to help you frame the proposal. Be an ant, not a grasshopper.

UH, Hawaii and Regional Grants

University of Hawaii
University Research Council

Faculty Travel Funds

Proposal Deadline: rolling – applications must be in >4 weeks before travel.

http://www.hawaii.edu/urc/pdf/factravel_g.pdf

http://www.hawaii.edu/urc/pdf/factravel_f.pdf

U.S. Department of Education

Native Hawaiian Program CFDA 84.031W

Proposal Deadline: May 22, 2008

<http://apply.grants.gov/opportunities/instructions/oppED-GRANTS-042208-004-cfda84.031-cid84-031W2008-1-instructions.doc>

Hawaii Community Foundation

Kahuku Community Fund

Proposal Deadline: June 23, 2008

http://www.hawaiicommunityfoundation.org/doc_bin/grant_rfps/2008/KahukuRFP2008.pdf

U.S. Housing and Urban Development
**Alaska Native and Native Hawaiian Institutions
Assisting Communities**
Proposal Deadline: July 2, 2008
http://www.ctahr.hawaii.edu/vincent/5200_13_ALASKA_NATIVE.pdf

Hawaii Community Foundation
**Annie Sinclair Knudsen Memorial Fund / Kauai
Community Grant Program**
Proposal Deadline: July 7, 2008
http://www.hawaiicommunityfoundation.org/doc_bin/grant_rfps/2008/KnudsenRFP2008.pdf

Hawaii Community Foundation
Atherton Family Foundation
Proposal Deadlines: August 1, 2008, October 1, 2008,
December 1, 2008
<http://www.athertonfamilyfoundation.org/>

Hawaii Community Foundation
Fred Baldwin Memorial Foundation
Proposal Deadline: August 1, 2008
<http://www.fredbaldwinfoundation.org/>

Hawaii Community Foundation
**Family Literacy and Hawaii Pizza Hut Literacy
Programs**
Proposal Deadline: August 1, 2008
http://www.hawaiicommunityfoundation.org/doc_bin/grant_rfps/2008/Literacy_FamilyRFP_2008.pdf

Hawaii Community Foundation
Medical Research Proposal
Proposal Deadlines: August 15, 2008
http://www.hawaiicommunityfoundation.org/doc_bin/grant_rfps/2008/MedResRFP2008.pdf

Hawaii Community Foundation
Hawaii People's Fund Grants
Proposal Deadline: September 1, 2008
<http://www.hawaiipeoplesfund.org/grantmaking/>

Hawaii Audubon Society
Hawaii Audubon Society Research Grants
Proposals due: September 1, 2008
<http://www.hawaiiaudubon.com/haspdf/grant.pdf>

Hawaii Community Foundation
Cooke Foundation Grants
Proposal Deadline: September 1, 2008
<http://www.cookefdn.org/>
Hawaii Community Foundation
Rev. Takie Okumura Family Fund – Children and Youth
Proposal Deadline: September 15, 2008
http://www.hawaiicommunityfoundation.org/doc_bin/grant_rfps/2008/Okumura_RFP_2008.pdf

Agricultural Grants

U.S. Department of Agriculture, CSREES
Western Sustainable Agriculture Research and Education
Program
Sustainable Agriculture Tours
Proposals: Open until funding is exhausted
http://wsare.usu.edu/grants/docs/RFA_SAT.pdf

U.S. Department of Agriculture, CSREES
Smith-Lever Special Needs Program
Proposal Deadline: May 28, 2008
http://www.csrees.usda.gov/funding/rfas/pdfs/08_smith_lever.pdf
<http://www.csrees.usda.gov/fo/smithleverspecialneeds.cfm>

U.S. Department of Agriculture, CSREES
Western Sustainable Agriculture Research and Education
Program
Western SARE Graduate Student Grants
Application Deadline: May 30, 2008
http://wsare.usu.edu/grants/docs/RFA_GS.pdf

U.S. Department of Agriculture
CSREES – NRI
Animal Genome (C): Bioinformatics
Proposal Deadline: June 5, 2008
<http://www.csrees.usda.gov/fo/animalgenomebioinformaticsnri.cfm>
http://www.csrees.usda.gov/funding/rfas/pdfs/08_nri.pdf

U.S. Department of Agriculture
CSREES – NRI
Animal Genome (B): Tools and Resources
Proposal Deadline: June 5, 2008
<http://www.csrees.usda.gov/fo/animalgenometoolsresourcesnri.cfm>
http://www.csrees.usda.gov/funding/rfas/pdfs/08_nri.pdf

U.S. Department of Agriculture
CSREES – NRI
Animal Growth and Nutrient Utilization
Proposal Deadline: June 5, 2008
<http://www.csrees.usda.gov/fo/animalgrowthandnutrientusenri.cfm>
http://www.csrees.usda.gov/funding/rfas/pdfs/08_nri.pdf

U.S. Department of Agriculture
CSREES – NRI
**Agricultural Prosperity for Small and Medium-Sized
Farms**
Proposal Deadline: June 5, 2008
<http://www.csrees.usda.gov/fo/smallfarmsagriculturalprosperitynri.cfm>
http://www.csrees.usda.gov/funding/rfas/pdfs/08_nri.pdf

U.S. Department of Agriculture, CSREES
Western Sustainable Agriculture Research and Education
Program

Research and Education Competitive Grants Program

Pre-applications due: June 13, 2008

Invited proposals due: November 14, 2008

http://wsare.usu.edu/grants/docs/RFPPre_RE.pdf

U.S. Department of Agriculture, CSREES

Critical Agricultural Materials

Proposal Deadline: June 15, 2008

<http://www.csrees.usda.gov/fo/criticalagriculturalmaterials.cfm>

http://www.csrees.usda.gov/funding/rfas/pdfs/08_cam.pdf

Gardener's Supply Company

The Garden Crusader Awards

Nomination Due: June 15, 2008

<http://www.gardeners.com/Garden-Crusader-Awards/5549.default.pg.html>

U.S. Department of Agriculture, CSREES

Critical Issues: Emerging and New Plant and Animal Pests and Diseases

Proposal Deadline: September 30, 2008

<http://www07.grants.gov/search/search.do;jsessionid=H0HBC21DQnVBn5CCPqypTBQLf52F396VdNT05VynCrhbCh46ZKZcl834976773?oppld=15582&flag2006=true&mode=VIEW>

U.S. Department of Agriculture, CSREES

Western Sustainable Agricultural Research and Education
Program

Professional Development Program Grants

Proposal Deadline: November 3, 2008

http://wsare.usu.edu/grants/docs/RFA_PDP.pdf

U.S. Department of Agriculture, CSREES

Western Sustainable Agricultural Research and Education
Program

Farmer/Rancher Research & Education Grants

Proposal Deadline: December 5, 2008

http://wsare.usu.edu/grants/docs/RFA_FRG.pdf

U.S. Department of Agriculture, CSREES

Western Sustainable Agricultural Research and Education
Program

Professional & Producer Grants

Proposal Deadline: December 5, 2008

http://wsare.usu.edu/grants/docs/RFA_PP.pdf

U.S. Department of Agriculture
Agricultural Marketing Service

Specialty Crop Block Grant Program

Proposal Deadline: March 5, 2009

<http://apply.grants.gov/opportunities/instructions/oppUSDA-AMS-SCBGP-030509-cfda10.169-instructions.doc>

Rural and Community Development Grants

CHS Foundation

Returning Value to Rural Communities

Proposal Deadline: rolling – applications accepted year
round

<http://www.chsfoundation.org/programs/rvrc.htm>

U.S. Department of Agriculture

Rural Development Agency

Renewable Energy Systems and Energy Efficiency Improvement Grants and Guaranteed Loans

Application Deadline: June 16, 2008

<http://www.rurdev.usda.gov/ga/nofa08energy.pdf>

Environment, Water, Energy, Invasive Species Grants

U.S. Environmental Protection Agency

Broad Agency Announcement for Conferences, Workshops and/or Meetings

Proposal Deadlines: June 5, 2008, December 9, 2008

http://es.epa.gov/ncer/rfa/2008/2008_baa.html

U.S. Department of Energy

Golden Field Office

University Research in Biomass Technologies: Applied Research in Conversion of Biomass to Advance Fuels

Proposal Deadline: June 6, 2008

<https://e-center.doe.gov/iips/faopor.nsf/UNID/F9E991EBB53A1463852574260075ABFA?OpenDocument>

U.S. Department of Agriculture, CSREES

Conservation Effects Assessment Program

Proposal Deadline: June 17, 2008

<http://www.csrees.usda.gov/fo/watershedconservationeffectsassessmentscgp.cfm>
http://www.csrees.usda.gov/funding/rfas/pdfs/08_conservation_effects.pdf

U.S. Department of Interior

U.S. Fish and Wildlife Service

National Coastal Wetlands Conservation Grant Program

Proposal Deadline: June 27, 2008

http://ecos.fws.gov/docs/coastal_grants/web/pdf/1141.pdf
http://ecos.fws.gov/coastal_grants/viewContent.do?viewPage=home

U.S. Department of Energy

State Energy Program Formula Funds

Proposal Deadline: August 1, 2008

<https://e-center.doe.gov/iips/faopor.nsf/UNID/F6D14791DF8F85598525740B006B39C3?OpenDocument>

U.S. Department of Interior
U.S. Fish and Wildlife Service

Coastal Programs

Proposal Deadline: September 30, 2008

<http://ecos.fws.gov/coastal/viewContent.do?viewPage=home>

U.S. Department of Interior
U.S. Fish and Wildlife Service

Partners for Fish and Wildlife Program

Proposal Deadline: September 30, 2008

<http://ecos.fws.gov/partners/viewContent.do?viewPage=home>

U.S. Department of Energy
Chicago Science Center

Energy Frontier Research Center

Letter of Intent Due: July 1, 2008

Proposal Deadline: October 1, 2008

<https://e-center.doe.gov/iips/faopor.nsf/UNID/933104E42D0185E58525742100694C78?OpenDocument>

U.S. Environmental Protection Agency

Broad Agency Announcement for Conferences, Workshops and/or Meetings

Proposal Deadlines: December 9, 2008

http://es.epa.gov/ncer/rfa/2008/2008_baa.html

Health, Nutrition, Food, Biomedical Grants

Department of Health and Human Services
National Institutes of Health

Diet Composition and Energy Balance (R01)

Proposal Deadlines: June 5, 2008, October 5, 2008

<http://grants1.nih.gov/grants/guide/pa-files/PA-07-218.html>

Department of Health and Human Services
Centers for Disease Control and Prevention (CDC)

Building A Health Nation – Strategic Alliance for Health

Letter of Intent Due: May 23, 2008

Proposal Deadline: June 24, 2008

<http://www.cdc.gov/od/pgo/funding/DP08-813.htm>

Department of Health and Human Services
National Institutes of Health

Nanoscience and Nanotechnology in Biology and Medicine (R01) (R21)

R01 Proposal Deadlines: June 5, 2008, October 5, 2008

R21 Proposal Deadlines: June 16, 2008, October 16, 2008

<http://grants.nih.gov/grants/guide/pa-files/PA-08-052.html?CFID=3004911&CFTOKEN=41901981>

<http://grants.nih.gov/grants/guide/pa-files/PA-08-053.html?CFID=3004911&CFTOKEN=41901981>

<http://grants.nih.gov/grants/guide/pa-files/PA-08-053.html?CFID=3004911&CFTOKEN=41901981>

<http://grants.nih.gov/grants/guide/pa-files/PA-08-053.html?CFID=3004911&CFTOKEN=41901981>

U.S. Department of Agriculture
CSREES – NRI

Human Nutrition and Obesity

Proposal Deadline: June 5, 2008

<http://www.csrees.usda.gov/fo/humannutritionobesitynri.cfm>
http://www.csrees.usda.gov/funding/rfas/pdfs/08_nri.pdf

Department of Health and Human Services
National Institutes of Health

Research on the Economics of Diet, Activity and Energy Balance (R21)

Proposal Deadline: June 16, 2008, October 16, 2008

<http://grants.nih.gov/grants/guide/pa-files/PA-08-077.html?CFID=3252367&CFTOKEN=71529920>

U.S. Department of Health and Human Services
National Institutes of Health

Improving Diet and Physical Activity Assessment (RO1)

Letters of Intent Due: January 16, 2009

Proposal Deadline: February 16, 2009

<http://grants.nih.gov/grants/guide/pa-files/PAR-07-259.html>

U.S. Department of Health and Human Services
National Institutes of Health

Improving Diet and Physical Activity Assessment (R21)

Letters of Intent Due: January 16, 2009

Proposal Deadline: February 16, 2009

<http://grants.nih.gov/grants/guide/pa-files/PAR-07-259.html>

Science Grants

Human Frontier Science Program
Short term Fellowship Program

Proposal Deadline: rolling – applications accepted year round

http://www.hfsp.org/how/appl_forms_STF.php

National Science Foundation
Science, Technology, and Society

Proposal Deadlines: August 1, 2008, February 1, 2009

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08553

Fellowships

National Science Foundation

Faculty Early Career Development (CAREER) Program

Application Deadlines: July 22-24, 2008 (depending on discipline); July 21-23, 2009, July 20-22, 2010

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08557

National Endowment for the Humanities

Fellowships at Digital Humanities Centers

Application Deadline: September 14, 2008

<http://www.neh.gov/grants/guidelines/fdhc.html>

For Graduate Students

U.S. Department of Agriculture, CSREES
Western Sustainable Agriculture Research and Education
Program

Western SARE Graduate Student Grants

Application Deadline: May 30, 2008

http://wsare.usu.edu/grants/docs/RFA_GS.pdf

American Association for the Advancement of Science

GE & Science Prize for Young Life Scientists

Application Deadline: August 1, 2008

<http://www.sciencemag.org/feature/data/prizes/ge/howto.dtl?CFID=3562940&CFTOKEN=49571517>

Families, Youth and Children Grants

CHS Foundation

Rural Youth and Leadership Development

Proposal Deadline: rolling – applications accepted year
round

<http://www.chsfoundation.org/programs/ryld.htm>

U.S. Department of Agriculture, CSREES

Rural Health and Safety Education Competitive Grants

Proposal Deadline: June 2, 2008

<http://www.csrees.usda.gov/fo/ruralhealthandsafetyeducation.cfm>

http://www.csrees.usda.gov/funding/rfas/pdfs/08_rural_health.pdf

U.S. Department of Health and Human Services
Administration for Children and Families

Child Welfare Training: National Child Welfare Workforce Initiatives

Proposal Deadline: June 5, 2008

<http://www.acf.hhs.gov/grants/open/HHS-2008-ACF-ACYF-CT-0047.html>

U.S. Department of Health and Human Services
Administration for Children and Families

Head Start Innovation and Improvement Projects

Letter of Intent due: May 19, 2008

Proposal Deadline: June 9, 2008

<http://www.acf.hhs.gov/grants/open/HHS-2008-ACF-OHS-YD-0025.html>

Foundation for Child Development

PK-3 Research and Evaluation Small Grants Program

Proposal Deadline: July 15, 2008

<http://www.icpsr.umich.edu/PK3/spotlight/rfp.html>

National Gardening Association

Youth Garden Grants

Proposal Deadline: November 15, 2008

<http://www.kidsgardening.com/YGG.asp>

Education Grants

National Science Foundation

NSF Graduate Teaching Fellows in K-12 Education

Letters of Intent due: May 16, 2008

Invited Proposal Deadline: July 3, 2008

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08556

National Science Foundation

Course, Curriculum and Laboratory Improvement

Proposal Deadline: May 20, 2008

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08546

U.S. Department of Education

Education Research CFDA 84.305A-1

Education Research on Statistical and Research

Methodology in Education CFDA 84.305D

Special Education Research CFDA 84.324-A

Proposal Deadline: June 26, 2008

<http://a257.g.akamaitech.net/7/257/2422/01jan20081800/edocket.access.gpo.gov/2008/pdf/08-911.pdf>

U.S. Department of Agriculture, CSREES

Higher Education Multicultural Scholars Program

Proposal Deadline: July 28, 2008

<http://www.csrees.usda.gov/fo/multiculturalscholarshp.cfm>

http://www.csrees.usda.gov/funding/rfas/pdfs/08_multicultural_selg.pdf

National Science Foundation

Informal Science Education

Letter of Intent Due: September 18, 2008

Proposal Deadline: December 18, 2008

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08547

U.S. Department of Education

Special Education Research CFDA 84.324A-2

Evaluation of State and District Evaluation Programs

and Policies CFDA 84.305E

Education Research and Development Centers CFEA 84.305C

Education Research Training CFDA 84.305B

Special Education Research Training CFDA 84.324B

Proposal Deadlines: October 26, 2008

<http://a257.g.akamaitech.net/7/257/2422/01jan20081800/edocket.access.gpo.gov/2008/pdf/08-911.pdf>

Humanities Grants

U.S. National Endowment for the Humanities

Fellowship Awards

Application Deadline: May 1, 2008

<http://www.neh.gov/grants/guidelines/Fellowships.html>

U.S. National Endowment for the Humanities

Challenge Grants

Proposal Deadline: May 1, 2008

<http://www.neh.gov/grants/guidelines/challenge.html>

U.S. National Endowment for the Humanities

Faculty Research Awards

Proposal Deadline: May 1, 2008

<http://www.neh.gov/grants/guidelines/facultyresearch.html>

U.S. National Endowment for the Humanities

Fellowships for Advanced Social Science Research on Japan

Application Deadline: May 1, 2008

<http://www.neh.gov/grants/guidelines/fellowships-japan.html>

National Endowment for the Humanities

Collaborative Research Grants

Proposal Deadline: November 4, 2008

<http://www.neh.gov/grants/guidelines/collaborative.html>

Financial Grants

Money Management International Financial Education Foundation

Financial Education Grants

Proposal Deadline: rolling – applications accepted year round

<http://www.mmifoundation.org/GrantSeekers.asp>

National Endowment for Financial Education

Innovative Financial Literacy Grants

Concept Paper Due: June 3, 2008

<http://nefe.org/Grantmaking/GrantGuidelines/tabid/127/Default.aspx>

FINRA Investor Education Foundation

Research and Education Grants

Project Concept Paper Due: July 12, 2008

<http://www.finrafoundation.org/guidelines.asp>

U.S. Department of Health and Human Services Administration for Children and Families

Assets for Independence Demonstration Grants

Proposal Deadline: January 15, 2009, March 25, 2009

<http://www.acf.hhs.gov/grants/open/HHS-2008-ACF-OCS-EI-0053.html>