CTAHR Research News

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Ania Wieczorek removes samples from a Polymerase chain reaction (PCR) machine that enzymatically replicates DNA for further study.

The arrival of Molecular Ecology

CTAHR capital improvement projects

Abundance of grants in 2007

In this issue

From the Associate Dean and Associate Director for Research

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

It is hard to believe it is December again! Although days are indeed a little chillier and shorter at this time; we cannot complain when others must brave the snow and sub-zero temperatures where they live. While we humans are enjoying the beautiful warm winter weather of Hawaii, so are many other unwanted species. Last month, our cover story was about invasive insects and this month we cover invasive plants, or weeds. Dr. Ania Wieczorek of the Tropical Plant and Soil Sciences department is our biotechnologist who uses modern molecular biology techniques to study why weeds are so invasive, and to establish rapid assays to identify invasive weeds. She and her graduate students are also studying the ecologic and genetic changes of potential biological control agents following their introduction into a new environment. Her work will yield results which are critical to the future success of our agriculture production and our environment.

I visited the National Pingtung University of Science and Technology (NPUST) earlier this month at the invitation of Dr. Po-Yung Lai, CTAHR's Outstanding Alumni Award recipient for 2006. He previously served as the vice president of NPUST and is now the Chair of the Department of Tropical Agriculture and International Cooperation, a unit he singled-handedly built up nine years ago. The short piece about this particular program touches upon Dr. Lai's accomplishments since leaving CTAHR nine years ago.

As reported last month: for the first time, the Senate Appropriations Committee has adopted new languages to limit Special Research Grant funding for three years, and we must provide performance measurements for the funding. However, more bad news arrived this month. As you may have already heard, the incoming Chairs of the House and Senate appropriations committees have announced their intention to use Continuing Resolution (CR) to keep the federal government running for FY2007. The implication (of using CR) is that all Congressional earmarks will be eliminated from the budget – which means an $8 million loss for us in one single year. Although it is uncertain until February 15, the consensus right now is that a year-long CR is very likely. We have been concerned that our research programs are disproportionately dependent on these Congressionally-mandated Special Research Grants and Cooperative Agreements, and the loss of this year's funding is a good warning for us to transition to other funding sources, such as competitive grants. This will be a good time to repackage your TSTAR and special grant proposals for submittal to competitive grant programs. By doing so, you can secure additional funding to keep your research program intact. We will keep you posted on further development of this issue.

This is the season for giving and we should give thanks to other offices that support our research programs. Our Planning and Management Office – Thomas Lim and his staff – have been very busy getting all these projects approved and up-to-date. Our office could not function without them. So with the close of *CRN* for 2006, I wish you and your families a happy and safe holiday season!

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Applying molecular biology in agriculture, environmental management and conservation – the heroic arrival of *Molecular Ecology!*

By Ania Wieczorek
Department of Tropical Plant and Soil Sciences

The Wieczorek lab consists of (bottom, L-R) Stephanie Dunbar (Molokai), Ania Wieczorek (Poland), Carol Tran (Oahu), (top, L-R) Adam Vorsino (Oahu), Jaco Le Roux (South Africa), Neal Akatsuka (Oahu).

Virtually all landscapes are vulnerable to invasive pests that come from outside, establish and spread uncontrollably. This is especially true for island ecosystems such as the Hawaiian Islands. Before the arrival of humans in Hawaii, native organisms evolved in relative isolation. Isolated evolution means that these species never experienced the influences of high species diversity and different habitats typically of continents, and never evolved the ability to compete under these types of conditions. An example of vulnerability is grazing: the floras of most isolated islands are severely impacted by recently introduced grazers, as the native plants never had the chance or evolutionary stimulus to evolve defense mechanisms such as thorns or toxins against grazers.

Invasions by plants and animals often lead to the loss of species biodiversity, agricultural productivity and changes in ecosystem processes such as water cycling and fire hazards. This all underscores the necessity for effective means to identify potential invasive species, ways to manage them, and to predict which species pose a particular risk of becoming invasive.

Who cares about the molecular biology stuff?
Biologists working on invasive species try to unravel the traits that contribute to invasiveness and develop effective management strategies. DNA technology offers many options to understand biological problems, and recent developments in this technology allow scientists to address questions related to invasive species that were previously troublesome and often impossible to achieve. For example, biological control (the use of living organisms to control other organisms) is often the only economical option to control pest species. For this strategy to work it is useful to know the exact location from which a pest has been introduced, which is often unknown. DNA sequencing now makes it possible to compare pest populations with different native populations to identify the most likely region of origin, and thus find effective biological control agents. We can also use a particular pest to predict the potential spread of similar organisms that are not pests yet in that particular environment. However, tracking the dispersal of organisms is often

Herbicide treatments experiment of three alien African grasses threatening *Heteropogon contortus* L. in the Hawaiian Islands.

Dr. Ania Wieczorek, Jaco Le Roux and Carol Tran discussing data of the recent experiment.

problematic especially for plants. DNA technology can help describe such patterns by indirectly tracing the movement of genes across landscapes, since genes disperse in similar fashion as the plant parts (seeds and pollen) that carry them. By comparing patterns of dispersal to environmental conditions we can identify regions that are most likely to be invaded by similar organisms and prioritize conservation efforts. Dispersal patterns can also indicate which management strategy is most likely going to be most productive. For example, if organisms disperse in an "advancing front," like a forward-marching army, containment of that front would be the best option. In comparison, if organisms are spreading over long distances then eradication of new populations would be the best strategy.

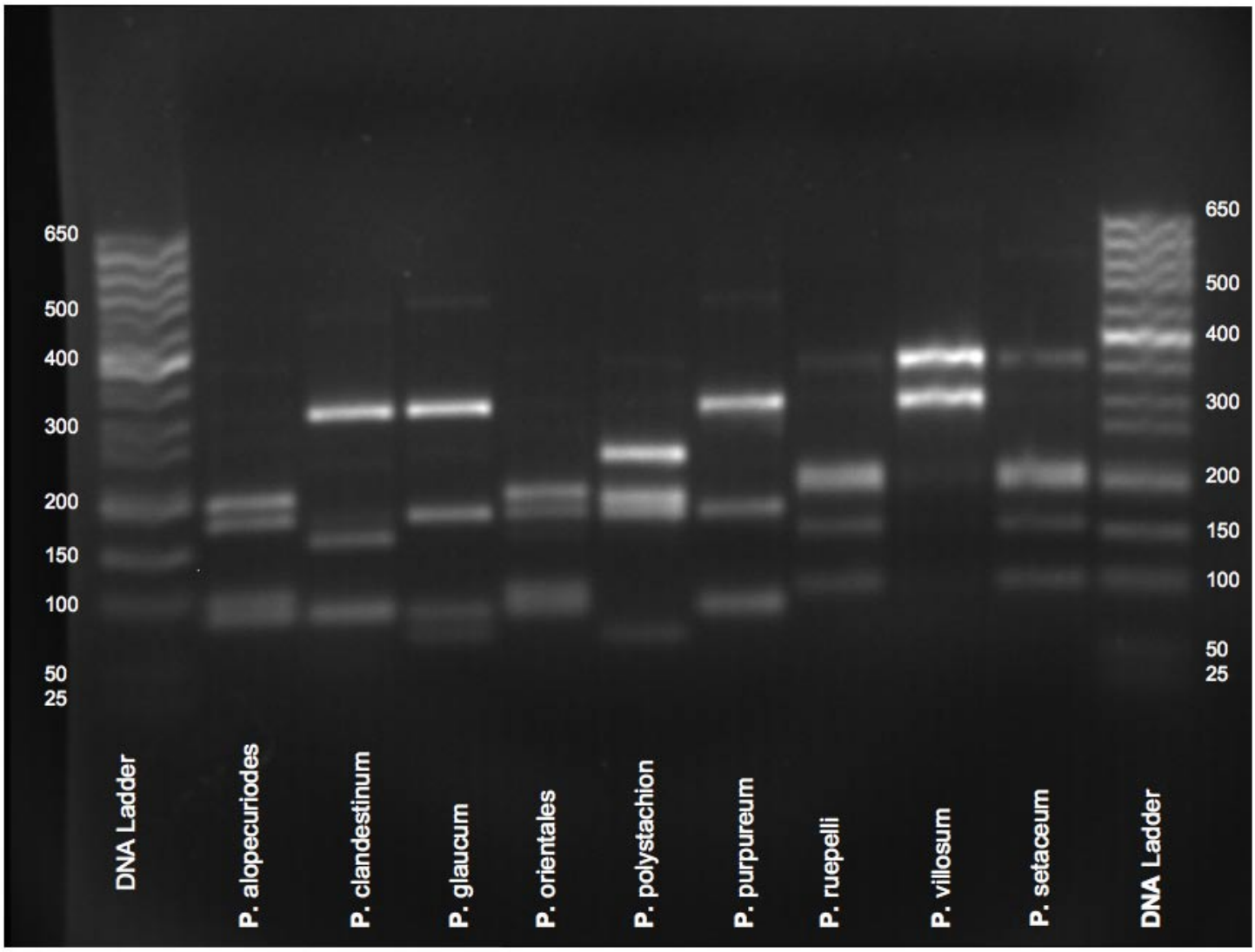
The TPSS Molecular Ecology lab

One of the main thrusts of my research and the members of my lab, is to unravel and understand why some introduced species become invasive, to observe their behavior once they have invaded, and to develop effective management strategies for them. The graduate students and technical staff maintain an active laboratory and I would like to share the achievements of each of our current projects.

Research on invasive species

Dispersal and population genetics of invasive weeds: management implications

Jaco Le Roux is a Ph.D. candidate working on various invasive weed species. He uses molecular biology as a tool to examine the invasiveness of these species, by quantifying their genetic diversity and channels of dispersal. One of these species – the highly aggressive fountain grass that is notoriously as one of Hawaii's worst invaders – is the subject in a major population genetics study. This work has revealed a new, but often overlooked, mechanism promoting invasiveness. From his genetics results, Jaco proved that fountain grass collected from various locations around the world share a single genotype (exactly the same DNA makeup, i.e. clone) and that this species' ability to tolerate various environmental conditions (known as phenotypic plasticity) contributes to its success in disturbed habitats in Hawai'i, California and Africa. To our knowledge this is the first time this phenomenon has been observed over such a large geographical scale. This has implications for the ornamental industry that often creates clones for nursery plants: we assume they



Agarose gel of Restriction Enzyme Digestion of ITS gene for various *Pennisetum* species.

are safe because they have low genetic diversity, but is this true considering the fountain grass phenomenon?

In collaborative work with the Hawaii Department of Agriculture, Jaco was able to identify the source population of another invasive species, fireweed (*Senecio madagascariensis*), and this information will be used in an ongoing biological control project to locate effective control organisms. Fireweed is of major concern to the beef ranching industry since it is toxic to livestock, and we are currently assessing patterns of dispersal for this weed in the Hawaiian Islands making use of various DNA markers.

Jaco is also conducting genetic research on *Miconia calvescens* throughout the Pacific (Hawaii, Moorea, New Caledonia, Raiatea, Tahiti and Nuku Hiva), and *Miconia* is especially problematic in Tahiti where it has taken over 65% of all vegetation. The climatic similarities between Tahiti and Hawaii makes genetic analysis a very important tool in determining the likelihood of Tahiti having the same devastating *Miconia* problem as Hawaii. Similar genetic makeup should be alarming to management authorities. The importance of genetic diversity in invasion success for this species is another aspect we are examining.

Ecological and genetic changes in a biological control agent following introduction into new environment

In another collaborative project with Russ Messing and Mark Wright (PEPS), I am investigating genetic and behavioral changes in an introduced biological control agent that has made a dramatic host shift from its target host to a beneficial insect in Hawaii. We were successful in procuring funding from the CSREES-USDA-National Research Initiative Competitive Grants Program for this work. It is of primary importance to both the sustainability of agriculture and conservation

Adam Vorsino collecting native insects atop Mauna Kea using pitfall traps.

in Hawaii and the world that new, more specific and predictive methods be developed for the introduction of naturally occurring biological control agents into new environments. Once adopted, the implementation of these new strategies will directly result in a reduction of dependence on insecticide usage, an increase in food availability and an exponential decrease in the rising cost of agriculture.

A great concern is that after the introduction of these new beneficial organisms, an unfavorable shift (genetic or behavioral) may occur, resulting in negative impacts on species in the new environment. **Adam Vorsino**, a graduate student, is in the process of developing molecular tools to understand and quantify the role of evolution on biological control agents once introduced into a new environment. We are studying the (host) shift of the beneficial parasitoid wasp *Diachasmimorpha tryoni* from its primary host, the devastating agricultural pest *Ceratitis capitata* (fruit fly), onto another beneficial organism *Eutreta xanthocaeta,* a fly that was introduced to Hawai'i to control lantana, a serious invasive weed. Adam is using microsatellite DNA to assess to what extent the wasps on different hosts have evolved into distinct populations. He is also comparing the Hawai'i wasps with samples from their native Australia to determine how much they have changed genetically in the past 100 years since being introduced to Hawaii. Using this new association as a model system, we plan to incorporate our analysis into a risk assessment that will be better able to predict the success of a biological control agent and reduce the risks associated with it. This project also addresses some very basic aspects of evolution and stands to make a significant contribution soon.

Development of unique molecular markers for rapid identification of potentially invasive weeds in Hawaii

As explained above, controlling and managing invasive species is a very important task, but at the same time, preventing the arrival of new invasive species is as (if not more) important. For quarantine personnel, there are often problems in quickly identifying new arrivals. For this reason, another aspect of my research on invasive species addresses development of unique molecular markers for rapid identification of potentially invasive (and difficult to identify morphologically) weeds in Hawaii. In this recently initiated project, **Carol Tran**, an APT (fondly nicknamed 'Yoda' by lab members), and **Neal Akatsuka**, a 2nd year undergraduate honors student majoring in microbiology, concentrate on developing molecular markers to identify invasive weeds from closely related and morphologically similar desirable species. The objective is not necessarily to identify species *per se*, but to screen out certain samples of species or eliminate potential invasive species that might be intercepted by plant quarantine

staff at ports. Although CTAHR has a proven record of rapid response to invasive species outbreaks, we urgently need to broaden resident expertise in invasive species, and develop cross-disciplinary research teams to solve the problems caused by emergent invasive species. The development of molecular markers for rapid identification of plants – intercepted by quarantine inspectors or otherwise detected – will provide a significant contribution in addressing invasive species in CTAHR's collaboration with regulatory authorities. Development of this capacity will allow CTAHR researchers to identify potential problem species quickly, accurately, and cost-effectively.

Not all our research is on the bad guys: Conservation of Hawaiian species

I am collaborating with **Stephanie Dunbar**, a Botany Ph.D. candidate, on research that focuses on the evolution and conservation of the native Hawaiian species in the plant genus *Plantago*. Unfortunately, like many Hawaiian plant and animal groups, most of the species in this group are endangered. Despite this threat of extinction, however, the biology of the Hawaiian *Plantago* species remains poorly understood. Lack of knowledge concerning the group's taxonomy, ecology, physiology, and natural history has impaired the ability of conservation managers to implement appropriate management measures to ensure the survival of these rare endemics. To improve this situation, we are using molecular sequence data in combination with morphological, ecological, and physiological data to better understand of the group's evolution; and in turn, to improve our ability to conserve these species. This information will not only be used to motivate and direct conservation efforts for the Hawaiian *Plantago* species, but may also act as a template for studying the many other overlooked species in the Hawaiian flora.

***How does this all fit in the bigger picture*?** Part of the CTAHR vision is to actively help Hawaii diversify its economy, to ensure a sustainable environment, and to strengthen its communities. The TPSS Molecular Ecology lab contributes to achieving this vision through enhancing environmental sustainability: helping to prevent invasive species from destroying natural and agricultural potential in the Islands. Increased environmental sustainability is basic to diversifying the economy and maintaining healthy communities. At the same time, we contribute to a better understanding of basic aspects of evolution and ecology, and consequently to the international scientific community. In summary, our lab looks into some of the very basic things that make invasive species thrive and uses this information to reduce their impacts, making the world a better place.

Stephanie Dunbar in the field collecting native Hawaiian species in the plant genus *Plantago*

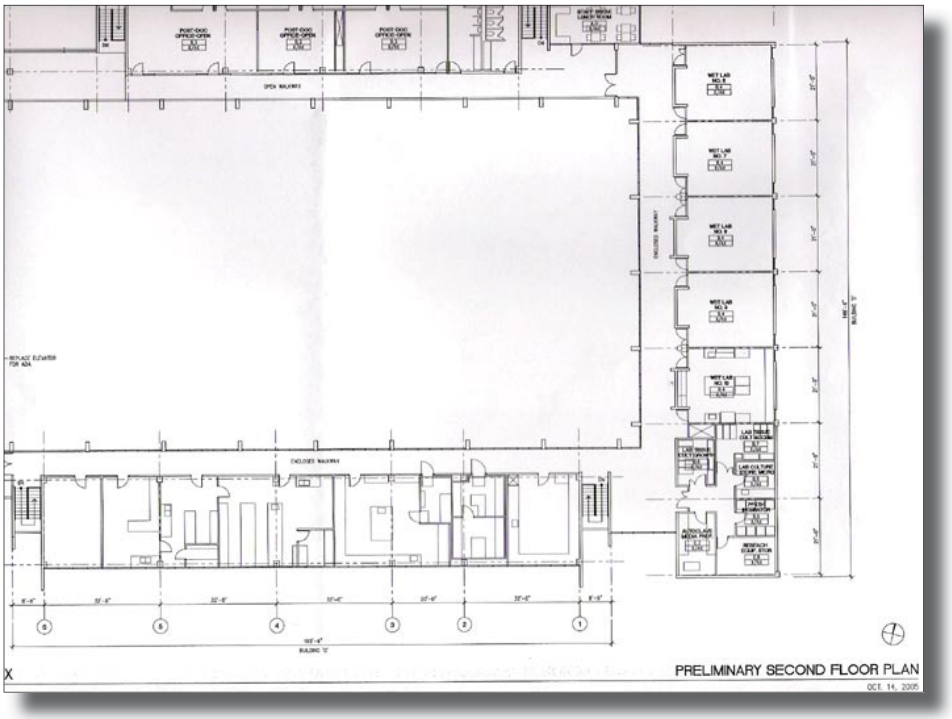
CTAHR's capital improvement projects

By Thomas Lim
Director, Planning and Management Systems

The greenhouses on the top of Gilmore Hall are to receive air conditioning once a new power line is in place.

Last year CY's office noted a number of projects that were on the 'to-do' list for the College. Here are some of the top projects that are in motion at this time. If you have any questions about these or other projects, just give me a call.

- Komohana Agricultural Complex– $14.5M project includes a 12,050 SF new laboratory wing and the renovation of a 12,700 SF wing "B" for offices. Status: start dated February 2007. Working with USDA for a Lease Termination Agreement for PBARC facilities at Waiakea for interim relocation of Komohana staff during construction period.
- Molokai Extension Office - $1.1M project for a 2,200 SF new building. Status: start date February 2007. Completing Maui permitting issues.
- Magoon Greenhouse Renovations - over $4.0M renovation project of all greenhouses. Expected start date spring 2007. All 12 greenhouses will be renovated.
- Pope Greenhouse Renovations – HOLD pending available funding.
- Agriculture Science Phase III Certified kitchen Renovation. $627K project is finally completed and will be available for the spring semester.
- Kona septic tank – Status: design completed, pending award of contract, start date spring 2007.
- Waimanalo Meadow Gold Dairies – BOR has given approval to negotiate with DLNR to acquire a long-term lease for 285 acres of the former Meadow Gold Dairies land.
- Waialee - BOR has given approval to negotiate the return of the parcel to DLNR. Discussions have begin for acceptable conditions for its return.
- Food Science and Technology Building – Final safety evaluation report by consultants is due January 2007.
- College Hill Greenhouse – Under design.
- Gilmore Hall power line to roof greenhouse project to start spring 2007.
- Gilmore Hall A/C for roof top greenhouses ($50K), work to begin in early 2007.



An example of a floor plan from the Komohana upgrade.

A visit to Taiwan's Pingtung U

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

Dr CY Hu meets with Dr. Po-Yung Lai, the former CTAHR Associate Director of Extension.

National Pingtung University of Science and Technology (NPUST) is one of three national universities that have a major presence in Taiwan's agriculture sector. NPUST has the largest campus among all national universities (more than 700 acres) with an enrollment of more than 13,000 students. Currently, NPUST has a total of 27 departments and 28 graduate institutes offering master's degrees and seven doctoral programs. These departments and graduate institutes are distributed among four colleges: agriculture, engineering, management, and humanities and social sciences. NPUST started as an agriculture college, and because of its location at the south end of Taiwan, it has the strongest tropical agriculture program in Taiwan. On January 1, 1999, NPUST and the University of Hawaii first signed a Memorandum of Understanding (MOU) and a new MOU was signed on May 2, 2006.

Dr. Po-Yung Lai is the director of the Department of Tropical Agriculture and International Cooperation at the National Pingtung University of Science University. Originally named the Institute of Tropical Agriculture, it was established in August 1997, as part of the expansion of the National Pingtung University of Science and Technology. At that time, Dr. Lai returned from Hawaii to serve as its director.

Dr. Lai was successful in securing a grant from the International Cooperation and Development Fund, Ministry of Foreign Affairs to start a graduate degree program for international students. Because the funding grew rapidly and the number of international students had increased accordingly, the institute was renamed the Institute of Tropical Agriculture and International Cooperation in August 2002. When the institute started to offer undergraduate courses to international students, it was once again renamed the Department of Tropical Agriculture and International Cooperation (DTAIC) in 2004.

DTAIC offers both undergraduate and graduate studies leading to Bachelor of Science, Master of Science and Doctor of Philosophy degrees. DTAIC maintains a close tie with ten disciplinary departments, including agribusiness management, animal science, aquaculture, food science, forestry, plant industry, plant protection, rural planning, veterinary medicine and wood industry. One of the unique features of the DTAIC is that students can take courses and conduct research according to their interests in any of those departments. Currently, there are 78 students from 25 countries enrolled in the department, and all courses are offered in English.

NPUST offers two scholarships to CTAHR students each year, creating an exciting opportunity for our students to spend one semester or one year gaining international experience in another tropical environment with students from Spanish and French-speaking countries. Our agreement with NPUST also supports faculty exchange for researchers who wish to conduct research in their new facilities and teach a course or two. Dr. Lai will be happy to host your sabbatical leave at NPUST, so please contact me if you are interested.

An interested group of faculty and students listen intently to Dr Hu's description of the US land grant system.

In the research calabash

By Doug Vincent
Special Program Director for Grants and Contracts

Hawaii Farm Bureau Federation seeking new proposals

Hawaii Farm Bureau Federation has announced its request for proposal for its Agriculture Research and Market Development Program for FY 2007. The deadline is February 1, 2007. The goal of the Agriculture Research and Marketing Program is to maintain Hawaii's competitive edge with the global market and to sustain the viability of Hawaii's agriculture. Projects to be funded may include demonstration projects, educational outreach programs, risk management projects, yield improvement or introduction of new varieties of crops, management of agricultural pests and diseases, and market research. The program will give higher consideration to projects with industry matching funds and/or in-kind contributions. Applications will be evaluated on a merit basis according to, but not limited to the following criteria: 1) importance to the industry; 2) project management; 3) expected outcomes; 4) immediate impact; 5) objectives; 6) benefits/value; 7) matching funds. A maximum of $100,000 per project is available but previously funded projects averaged about $30,000. For more information contact Mr. Alan Takemoto, HFBF at 808-848-2074. The entire RFA can be downloaded here: http://www.ctahr.hawaii.edu/vincent/2007_Hawaii_Farm_Bureau_RFP.pdf.

Note that these applications must be submitted to ORS using the ORS Form 5, prior to submission to Farm Bureau.

Proposals sought for international aquaculture work

The Aquaculture & Fisheries Collaborative Research Support Program (CRSP) invites proposals for Global Research, Capacity Building, and Institutional Development in Aquaculture and Aquatic Resources Management. Full proposals are due on 31 January 2007. Applicants are invited to submit 30-month proposals for the period of 1 April 2007 through 30 September 2009. Based on current budget projections, about 8 awards of approximately $400,000 each will be made to eligible U.S. universities or colleges to serve as Lead Partners. Eligibility criteria are specified in the RFP. Awards made under the RFP will focus on aquaculture and the nexus between aquaculture and fisheries. Projects are envisioned to comprise many partners in a multi-disciplinary, multi-institutional approach to solve a development problem. Lead Partners are expected to assume strong administrative and technical leadership for projects, be involved in advisory groups serving the overall program, and form collaborative partnerships through sub-awards to developing country institutions, NGOs, IARCs, private sector firms, and other U.S. universities or colleges. Matching support (non-federal cost share) is required and is specified in the RFP. Proposals will be peer-reviewed through an open and competitive process. Applicants will select a USAID-eligible country for their base operations and are encouraged to involve satellite countries to broaden the potential impact of their results. Further information regarding USAID-eligible countries is provided in the RFP. For more information and to download the RFP go here: http://pdacrsp.oregonstate.edu/afcrsp/rfp/.

New DOD funding opportunities for Hawaii ecosystems research

The Strategic Environmental Research and Development Program (SERDP) of the Department of Defense co-sponsored a workshop on threatened, endangered, and at-risk species in June, 2006. The purpose of the workshop was to identify high priority research topics for the Pacific Islands region. As a result of the workshop – two statements of need (SON) were identified. The are "Managing and Restoring the Dry Forest Ecological Systems in the Pacific Islands" (http://www.serdp.org/Funding/upload/SISON-08-01%20Pacific%20Dry%20Forests_Final.pdf) and "Impacts of military activities and invasive species on Pacific Island freshwater and near-shore marine ecosystems" (http://www.serdp.org/Funding/upload/SISON-08-02%20Pacific%20Aquatic_Final.pdf.) SERDP is seeking pre-proposals from non-federal applicants by January 4, 2007 for these and other SON's. For more information about SERDP, go here: http://www.serdp.org/funding/.

Exciting opportunities for bioenergy research

Bioenergy is hot! The Renewable Fuels Association has just announced that U.S. ethanol production in September, 2006 exceeded 333,000 barrels per day from the countries 109 ethanol refineries.

Demand will continue to grow. Maui-based Pacific Biodiesel opened its 10th biodiesel plant in California. They expect to build an additional 6 plants in California. To support this industry and demands for additional research and development are the federal government, through several agencies, is seeking proposals for research projects. Besides the CTAHR Sustainable Bioenergy Strategic Bioenergy Initiative (http://www.ctahr.hawaii.edu/vincent/CTAHR_Sustainable_Bioenergy_Initiative.pdf), there are several open funding opportunities.

The Department of Energy, through its Office of Biological and Environmental Research (Chicago Service Center) lists several open opportunities (http://www.sc.doe.gov/ober/opp.html). (Note that these opportunities require a pre-proposal or a letter of intent.) The Golden Field Office, through the Office of Energy Efficiency and Renewable Energy also has an open funding opportunity http://tinyurl.com/ye686t

The National Science Foundation also has several open funding opportunities in areas related to bioenergy, environment and sustainability: The following programs have proposal deadlines of March 1, 2007 and September 15, 2007:

- Environmental Engineering
- Environmental Sustainability
- Environmental Technology
- Energy for Sustainability
- Biotechnology

Consult the RFAs listed in the Open Grants for more details.

Mac users rejoice:
Grants.gov releases new software for Mac's.

Grants.gov has announced that IBM is developing a Macintosh version of the IBM Workplace Forms Viewer, and has made an early-release (Beta) version available for download. This software can be used if you do not have access to a Windows machine, Windows emulation software or the Citrix server. Support for the Mac Viewer is available from IBM Software support at http://www-306.ibm.com/software/support/probsub.html. To download the software and release notes, go here: http://www.grants.gov/resources/download_software.jsp#pureedgeviewer.

Seeking Funding from Foundations and Trusts?

Most of the grants we talk about are federal or state funding. But there are other resources to support your activities. They are charitable foundations. The Bill and Melinda Gates foundation comes to mind but there are thousands of charitable foundations that make grants for projects in their particular areas of interest. Some foundations may fund local civic projects in a particular geographic area or community; others may fund projects in particular subject matter areas – medical research or early childhood education or support for abused children or the environment, to name a few. Most federal grants have a single deadline and awards are made once a year. Foundations often have "rolling" deadlines or no deadlines and fund projects several times a year. Most federal grants have very specific

Top 20 Hawaii Foundations and Charitable Trusts accepting proposals

Ranking	Hawaii Foundations and Trusts
1	Hawaii Community Foundation
2	Harold K.L. Castle Foundation
3	Atherton Family Foundation
4	McInerny Foundation
5	Samuel N. and Mary Castle Foundation
6	Victoria S. and Bradley L. Geist Foundation
7	Strong Foundation
8	HMSA Foundation
9	Cooke Foundation Ltd.
10	Change Happens Foundation
11	G.N. Wilcox Trust
12	James and Abigail Campbell Family Foundation
13	First Hawaiian Bank Foundation
14	Teresa F. Hughes Trust Estate
15	Frear Eleemosynary Trust
16	Bank of Hawaii Charitable Foundation
17	Antone and Edene Vidinha Charitable Foundation
18	Servco Foundation
19	Hawaiian Electric Industries Charitable Foundation
20	Fred Baldwin Memorial Foundation
	(rankings based upon 2005 assets), **Source**: *Pacific Business News*, 11/24/06; (Vol. 44(38):14)

RFAs and require lengthy proposals and forms. Foundations may offer grants in broader areas. Each charitable foundation is different. A good on-line resource for finding funding from foundations and trust is the Foundation Center (http://foundationcenter.org). Through their Philanthropy News Digest, you can search for foundations that fund proposals in particular subject areas. Locally, the Hawaii Community Foundation (http://hawaiicommunityfoundation.org/) serves as local clearinghouse for grants made by other local charitable organizations. Many of the largest Hawaii foundations making grants do so through the Hawaii Community Foundation. The key to finding support through these sources and other charitable foundations is knowing what areas they will support and developing a relationship with the foundation, through inquiry with foundation personnel.

And, the grant winners are . . . !

By Doug Vincent
Special Program Director for Grants and Contracts

Since our last edition of *CRN*, we have received these additional grants. Another six awards for another $443,512. Thus far this year's state fiscal year (July 1, 2006 – June 30, 2007), CTAHR has received 122 awards for $18,835,705. With about half the state fiscal year completed, we are only a smidge more than $1 million short of our entire state FY 2006 total of $19,860,322. Congratulations. While it is true that most of our grants come in the first quarter of the state fiscal year, I am fairly certain we can easily exceed last year's mark. But we must not rest on our laurels. The new challenge facing CTAHR is the complete loss of all Congressional earmarks for federal FY 2007. These funds typical show up in the first quarter (July-Sept) of the state fiscal year. If we lose the Congressional earmark funds, we will lose approximately $7.5 to $8.0 million dollars in funding to CTAHR; almost 40% of our current total. And there are no guarantees that the earmark funds will ever return. So it is important for all of us to do what these grant winners have done – seek other extramural grants and contracts. Find other ways to support your activities. *CRN* provides a monthly update of many, many open grant opportunities. Find one that fits your needs and go for it. Congratulations to these winners!!

David A Christopher (MBBE)
Functional Genomics of the Protein Disulfide Isomerase Family: Unraveling Protein Folding and Redox-Regulatory Networks
National Science Foundation. $336,393.

Jonathan Deenik (TPSS)
Implementation of SARE Professional Development Program for Hawaii
University of Wyoming. $12,000.

Michael K. Kawate (PEPS)
Hawaii Pest Management and Regulatory Information and Notification Network
University of California-Davis. $41,300.

Barbara Yee (FCS)
Culture and Cancer Literacy Among Immigrant Women
University of Illinois. $17,828.

Russell S. Yost (TPSS)
Upscaling the Prediction of Total Carbon Stock in Semi-arid and Agro-ecological Zones of the Sub-Saharan Africa - Fellow A. Querido
Leadership Enhancement in Agriculture Program (LEAP). $20,000.

Halina M. Zaleski (HNFAS)
Kekaha Swine Waste Management
Hawaii-Dept of Agriculture. $15,991.

New opportunities to seek funding!

By Doug Vincent
Special Program Director for Grants and Contracts

Guess what – the grant season isn't over yet. Below and on the subsequent pages are a list of open grants in areas where CTAHR has interests and abilities. There are many opportunities that are still open and that are seeking applications. Explore the list or search the grants.gov web site (www.grants.gov) for prospects. We face the loss of much of CTAHR's research funding due the unexpected elimination of all Congressional earmarks in the FY 07 federal budget. These are opportunities to replace the funding that has been lost. Give it a try. After all, there is a 100% chance of rejection, if you **never apply** for the funding. Good luck and if our office can assist you, please let us know.

Hawaii Community Foundation
Victoria S. and Bradley L. Geist Foundation
Supporting Foster Children and Parents
Deadlines: January 2, 2007, May 1, 2007, September 3, 2007
http://hawaiicommunityfoundation.org/doc_bin/grant_rfps/RFP-geistfcp07final.doc

U.S. Department of Energy – Golden Field Office
Development of Robust, Highly Efficient Fermentative Organisms for the Conversion of Lignocellulosic Biomass to Ethanol
(Note: RFP requests a Letter of Intent but LOI is not required)
Deadline: January 4, 2007
https://e-center.doe.gov/iips/faopor.nsf/UNID/13949F628D2B2DB68525720C00706F4E?OpenDocument

U.S. Department of Energy
Office of Biological and Environmental Research
Program for Ecosystem Research
Pre-Applications Due: January 5, 2007
Proposals Due: April 10, 2007
https://e-center.doe.gov/iips/faopor.nsf/UNID/03958C13FC1D4E8F8525722E005A6739/$file/FOA_Notice_07-11.pdf

U.S. Department of Agriculture
CSREES – Secondary and Two-Year Postsecondary Agriculture Education Challenge Grants
Deadline: January 11, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1083

U.S. Department of Agriculture
CSREES – National Integrated Food Safety Initiative
Proposal Deadline: January 12, 2007
http://www.csrees.usda.gov/funding/rfas/pdfs/07_food_safety.pdf

U.S. Environmental Protection Agency
Pesticide Environmental Stewardship Program (PESP) Regional Grants
Deadline: January 12, 2007
http://www.epa.gov/PESP/regional_grants/2007announcement.htm

U.S. Department of Health and Human Services
National Institute of Environmental Health Sciences
Innovative Approaches to Remediation of Recalcitrant Hazardous Substances in Sediments (R01)
Deadline: January 12, 2007
http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-06-006.html

U.S. Environmental Protection Agency
Targeted Grants to Reduce Childhood Lead Poisoning: Request for Proposals 2006
Deadline: January 12, 2007
http://www.epa.gov/lead/pubs/nofa2006.pdf

Binational Agricultural Research and Development (BARD) Fund
Vaadia-BARD Postdoctoral Fellowships
Deadline: January 15, 2007
http://www.bard-isus.com/postguide_07.pdf

Binational Agricultural Resesearch and Development (BARD) Fund
Senior Research Fellowship
Deadline: January 15, 2007
http://www.bard-isus.com/ResFellguide_07.pdf

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Water and Watersheds
Deadline: January 17, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1135

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Arthropod and Nematode Biology and Management (A): Organismal and Population Biology.
Deadline: January 17, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1103

U.S. Environmental Protection Agency
State Innovation Grant Program
Deadline: January 18, 2007
http://www.epa.gov/innovation/stategrants/solicitation2007.pdf

U.S. Department of Health and Human Services
National Institute of Environmental Health and Safety
Letter of Intent Due: January 21, 2007
Proposal Deadline: March 22, 2007
http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-06-003.html

U.S. Department of Justice – National Institute of Justice
NIJ FY07 Intimate Partner Violence and Stalking: Research for Policy and Practice
Deadline: January 23, 2007
http://www.ncjrs.gov/pdffiles1/nij/sl000774.pdf

U.S. Agency for International Development
Assets and Market Access Collaborative Research Support Program
Deadline: January 25, 2007
http://www.basis.wisc.edu/live/AMA_CRSP_RFP.pdf

National Science Foundation
Major Research Instrumentation Program (needs to come from the institution)
Deadline: January 25, 2007
http://www.grants.gov/search/search.do?oppId=11296&mode=VIEW

U.S. Department of Energy – Chicago Service Center
Office of Biological and Environmental Research
Scientific Discovery through Advanced Computing: Climate Change Prediction Program
Deadline: January 25, 2007
https://e-center.doe.gov/iips/faopor.nsf/UNID/D0793A0892724C0B8525720D0042D18A?OpenDocument

U.S. Environmental Protection Agency
National Network for Environmental Management Studies Program Fellowship Program
Deadline: January 29, 2007
http://www.epa.gov/enviroed/NNEMS/pdf/solicitation2007.pdf

U.S. Agency for International Development
Aquaculture and Fisheries Collaborative Research Support Program
Deadline: January 31, 2007
http://pdacrsp.oregonstate.edu/afcrsp/rfp/RFP%20112306%20Aquaculture%20&%20Fisheries%20CRSP.pdf

National Fish and Wildlife Foundation
Coral Reef Conservation Fund
Preproposals Due: January 31, 2007
http://www.nfwf.org/programs/coral.cfm

U.S. Department of Health and Human Services
Substance Abuse and Mental Health Services Administration (SAMHSA)
Statewide Family Network Grants
Deadline: January 31, 2007
http://www.samhsa.gov/Grants/2007/sm_07_001.aspx

Hawaii Farm Bureau Federation
Agriculture Research and Market Development
Deadline: February 1, 2007
http://www.ctahr.hawaii.edu/vincent/2007_Hawaii_Farm_Bureau_RFP.pdf

U.S. Department of Health and Human Services
Substance Abuse and Mental Health Services Administration (SAMHSA)
Statewide Consumer Network Grants
Deadline: February 1, 2007
http://www.samhsa.gov/Grants/2007/sm_07_002.aspx

U.S. Department of Agriculture
CSREES – Higher Education Challenge Grants
Deadline: February 1, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1082

Civic Ventures – The Purpose Prize
Deadline: February 1, 2006
http://www.leadwithexperience.org/prize/index.cfm

National Aeronautics and Space Administration
ROSES2006: Ocean Biology and Biogeochemistry
Deadline: February 1, 2007
http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={307FF8D5-59A9-E2E0-0637-6ED8AB166C4F}&path=open

U.S. Department of Agriculture
NRCS – Conservation Innovation Grants
Deadline: February 2, 2007
http://www.nrcs.usda.gov/programs/cig/

U.S. Department of Agriculture
Food and Nutrition Service – Women, Infant, Children
Revitalizing Quality Nutrition Services in WIC
Letter of Intent Due: February 5, 2007
Proposal Deadline: April 2, 2006
http://www.fns.usda.gov/oane/menu/DemoProjects/WICSPG/FY2007/Grants07.htm

U.S. Department of Agriculture
CSREES - Special Research Grant – Citrus Tristeza
Deadline: February 7, 2007
http://www.csrees.usda.gov/funding/rfas/pdfs/07_citrus_tristeza.pdf

U.S. Department of the Interior
U.S. Fish and Wildlife Service
Cooperative Endangered Species Grants (must partner with state agency)
Deadline: February 7, 2007
http://www.fws.gov/endangered/grants/section6/FY07_CESCF_Announcement.pdf

U.S. Department of Agriculture
Agricultural Marketing Services
Federal-State Marketing Improvement Program
Deadline: February 12, 2007
http://www.ams.usda.gov/tmd/fsmip.htm

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Plant Genome
Deadline: February 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1604

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Agricultural Prosperity for Small and Medium-Sized Farm
Deadline: February 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1200

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Plant Biology (C): Biochemistry
Letter of Intent Due: December 6, 2006
Proposal Deadline: February 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1115

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Plant Biology (D): Growth and Development
Letter of Intent Due: December 6, 2006
Proposal Deadline: February 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1116

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Plant Genome (D): Applied Plant Genomics (CAP)
Letter of Intent Due: December 6, 2006
Proposal Deadline: February 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1604

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Biology of Weedy and Invasive Species in Agroecosystems
Letter of Intent Due: December 6, 2006
Proposal Deadline: February 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1123

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Soil Processes
Letter of Intent Due: December 6, 2006
Proposal Deadline: February 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1605

U.S. Department of Agriculture
Forest Service
Wood Education and Resource Center
Deadline: February 15, 2007
http://www.na.fs.fed.us/werc/grants.shtm

U.S. Department of Agriculture
CSREES – Biotechnology Risk Assessment Grant Program
Deadline: February 15, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1075

U.S. Department of Agriculture
CSREES - Integrated Research, Education, and Extension Competitive Grants Program:
Integrated Pest Management Methyl Bromide Transitions Program
Deadline: February 21, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1107

U.S. Department of Health and Human Services
National Institutes of Health
Environmental Sensors for Personal Exposure Assessment (SBIR [R43/R44])
Deadline: February 21, 2007
http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-07-001.html

U.S. Environmental Protection Agency
Sources and Atmospheric Formation of Organic Particulate Matter
Deadline: February 27, 2007
http://es.epa.gov/ncer/rfa/2007/2007_star_organic_pm.html

National Science Foundation
Environmental Engineering
Deadlines: March 1, 2007, September 15, 2007
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501029

National Science Foundation
Environmental Sustainability
Deadlines: March 1, 2007, September 15, 2007
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501027

National Science Foundation
Environmental Technology
Deadlines: March 1, 2007, September 15, 2007
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501030

National Science Foundation
Energy for Sustainability
Deadlines: March 1, 2007, September 15, 2007
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501026

National Science Foundation
Biotechnology (BTEC)
Deadlines: March 1, 2007, September 15, 2007
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501029

Department of Health and Human Services
National Institute of Health
Long-Term Weight Maintenance: Basic and Clinical Studies (R01)
Deadline: March 5, 2007, July 5, 2007, November 5, 2007
http://grants.nih.gov/grants/guide/pa-files/PA-07-053.html

Department of Health and Human Services
National Institute of Health
Retirement Economics (R01)
Deadline: March 5, 2007, July 5, 2007, November 5, 2007
http://grants.nih.gov/grants/guide/pa-files/PA-07-075.html

Department of Health and Human Services
National Institute of Health
Parenting Capacities and Health Outcomes in Youth and Adolescents (R01)
Deadline: March 5, 2007, July 5, 2007, November 5, 2007
http://grants.nih.gov/grants/guide/pa-files/PA-07-061.html

U.S. Department of Energy – Chicago Service Center
Office of Biological and Environmental Research
New Analytical and Imaging Technologies for Lignocellulosic Material Degradation, for Multiplexed Screening of Plant Phenotypes.
Deadline: March 6, 2007
https://e-center.doe.gov/iips/faopor.nsf/UNID/E569DBDE47BE80FF85257229006E3FC9?OpenDocument

National Science Foundation
Microbial Genome Sequencing Program
Deadline: March 8, 2007
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf07531

U.S. Department of Energy – Chicago Service Center
Office of Biological and Environmental Research
Quantitative Microbial Biochemistry and Metabolic Engineering for Biological Hydrogen Production
Deadline: March 8, 2007
https://e-center.doe.gov/iips/faopor.nsf/UNID/D390B42A791A6F4585257229006EE9EF?OpenDocument

U.S. Department of Energy – Chicago Service Center
Office of Biological and Environmental Research
New Genomic Strategies and Technologies for Studying Complex Microbial Communities Validating Genomic Annotations
Deadline: March 20, 2007
https://e-center.doe.gov/iips/faopor.nsf/UNID/E5EE262EBB18CEE085257230004F4337?OpenDocument

U.S. Department of Health and Human Services
National Institute of Environmental Health and Safety
Superfund Basic Research and Training Program (P42)
Letter of Intent Due: January 21, 2007
Proposal Deadline: March 22, 2007
http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-06-003.html

U.S. Department of Agriculture
Rural Development – Rural Business Opportunity Grants
Proposal Due: March 30, 2006
http://www.rurdev.usda.gov/rbs/busp/rbog.htm

U.S. Department of Energy – Chicago Service Center
Office of Biological and Environmental Research
Program for Ecosystem Research
Deadline: April 10, 2007
https://e-center.doe.gov/iips/faopor.nsf/UNID/03958C13FC1D4E8F8525722E005A6739?OpenDocument

U.S. Department of Health and Human Services
National Institutes of Health
Understanding and Promoting Health Literacy (R01)
Letters of Intent Due: April 24, 2007, December 24, 2007
Proposal Due: May 24, 2007, January 24, 2008
http://grants.nih.gov/grants/guide/pa-files/PAR-07-020.html

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Microbial Genomics (B): Functional Genomics of Microorganisms
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1091

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Arthropod and Nematode Biology and Management (B) and (C): Suborganismic Biology and Tools, Resources and Genomics
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1602

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Agricultural Markets and Trade
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1106

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Animal Growth and Nutrient Utilization
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1067

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Animal Genome
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1066

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Air Quality
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1062

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Human Nutrition and Obesity
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1095

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Plant Biosecurity
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1521

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Agricultural Markets and Trade
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1106

U.S. Department of Defense
United States Army Medical Research & Materiel Command
Broad Agency Announcement
Deadline: September 30, 2007
http://www.usamraa.army.mil/pages/index.cfm

U.S. Department of Defense
National Biodefense Analysis and Countermeasures Center
Broad Agency Announcement
Deadline: September 30, 2007
http://www.usamraa.army.mil/pages/index.cfm

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Arthropod and Nematode Biology and Management (B) and (C): Suborganismal Biology and Tools, Resources and Genomics.
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1602

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Animal Genome
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1066

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Animal Growth and Nutrient Utilization
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1067

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Air Quality
Deadline: June 5, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1062

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Animal Protection and Biosecurity (C): Animal Biosecurity Coordinated Agricultural Products (CAP)
Deadline: August 14, 2007
http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1522

U.S. Department of Agriculture
Agricultural Marketing Service
Specialty Crop Block Grant Program
Deadline: October 11, 2007
http://www.ams.usda.gov/fv/scbgp.html

Read it here first! - new faculty pubs

Greg Bruland (NREM)
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.

PingSun Leung (MBBE)
P.S. Leung and Carole Engle, Editors. 2006. *Shrimp Culture: Economics, Market and Trade*, Blackwell Publishers, 2006, 335pp.

S. Setboonsarng, P.S. Leung and J. Cai. 2006. "Contract Farming and Poverty Reduction: The Case of Organic Rice Contract Farming in Thailand," Chapter 10 in *Poverty Strategies in Asia*, J. Weiss and H.A. Khan, Editors, Edward Elgar Publishing, pp. 266-299.

J. Cai and P.S. Leung. 2006. "Export Performance of Frozen Cultured Shrimp in the Japan, U.S. and EU Markets: A Global Assessment," Chapter 2 in *Shrimp Culture: Economics, Market and Trade*, P.S. Leung and C. Engle, Editors, Blackwell Publishers, p. 11-39.

F. Martinez-Cordero and P.S. Leung. 2006. "Production Performance Economic Indicators and their Role in the Planning and Assessment of the Sustainable Development of Aquaculture," Chapter 7 in *Shrimp Culture: Economics, Market and Trade*, P.S. Leung and C. Engle, Editors, Blackwell Publishers, pp. 95-105.

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S. Moss and P.S. Leung. 2006. "Comparative Cost of Shrimp Production: Earthen Ponds versus Recirculating Aquaculture Systems," Chapter 19 in *Shrimp Culture: Economics, Market and Trade*, P.S. Leung and C. Engle, Editors, Blackwell Publishers, pp.291-300.

R. Yu, P.S. Leung and P. Bienfang. 2006. "A Decision Support System for Efficient Scheduling of Multi-Pond and Multi-Cycle Commercial Shrimp Culture," Chapter 21 in *Shrimp Culture: Economics, Market and Trade*, P.S. Leung and C. Engle, Editors, Blackwell Publishers, pp. 315-327.

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N.C. Pradhan and P.S. Leung. 2006. "Incorporating sea turtle interactions in a multi-objective programming model for Hawaii's longline fishery," *Ecological Economics*, 60(1):216-227.

R. Yu and P.S. Leung. 2006. "Optimal pest management: a reproductive pollutant perspective," *International Journal of Pest Management*, 52(3):155– 166.

J. Cai, P.S. Leung and J. Mak. 2006. "Tourism's forward and backward linkages," *Journal of Travel Research*, 45(1): 36-52.

N.C. Pradhan and P.S. Leung. 2006. "A Poisson and negative binomial regression model of sea turtle interactions in Hawaii's longline fishery," *Fisheries Research*, 78:309–322.

R. Yu, P.S. Leung and P. Bienfang. 2006. "Optimal production schedule in commercial shrimp culture," *Aquaculture*, 254: 426–441.

P.S. Leung. 2006. "Multiple-criteria decision making (MCDM) applications in fishery management," invited paper in a special issue on Planning Support Systems for Environmental Management, *International Journal of Environmental Technology and Management*, 6(1/2):96-110.

R. Yu, P.S. Leung and P. Bienfang. 2006. "Predicting shrimp growth: artificial neural network vs. nonlinear regression models," *Aquacultural Engineering*, 34(1):26-32.

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J. Cai and P.S. Leung. *Growth and Stability of Agricultural Production in Hawaii: A Portfolio Analysis*. Economic Issues EI-9, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, April 2006, 11pp.

Susan Miyasaka (TPSS)
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Rachel Novotny (HNFAS)
Murphy S, Blitz C, Novotny R . 2006. The Pacific Tracker. *Hawaii Medical Journal*. 2006; 65:175-178.

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Alan Titchenal (HNFAS)
Titchenal, C.A. and Dobbs, J.C. 2006. A system to assess the quality of food sources of calcium. *Journal of Food Composition and Analysis* (Epub ahead of print).

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Delegates from the Philippines visit

To follow up on the exchange agreement signed in early January, President Miriam Pascua and the Board of Regents of the Mariano Marcos State University visited Manoa campus on November 29-30 to attend a joint administrators' conference: "Re-engineering Higher Education Institutions in the Context of Globalization." The program is available at the following web site: http://www.ctahr.hawaii.edu/DeanDocs/06Nov29-30-MMSU-UHM Program.pdf. UH Regents, Drs. de la Peña and Hapai and Mr. Dahilig, and interim chancellor Dr. Konan all attended the conference and made presentations. UH President welcomed the Philippine delegation with a reception at the Bachman Hall. Several state senators and representatives attended the reception.

Meetings at CTAHR and UHM included the following individuals: Ramon de la Peña, Bryan Corpuz, Ned Shultz, Miriam Pascua, Denise Konan, Fredalito Pingao, Andres Tungpalan, Wayne Nishijima, Alegria Visaya.