

CTAHR Research News

October 4, 2005
Volume 1, Issue 2

In this issue

Learn about some of our work in orchids

Explore some of the written output from our faculty and staff

Understand more about what is happening at the national level with land grant colleges

Meet UH *Kaunana*, a new UH research publication

Explore new funding opportunities

CTAHR
Office of Research
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

Welcome to our second issue of the CTAHR Research News (CRN)! Thank you for the warm reception to our first issue. We received a number of suggestions and thank you notes from our readers. We will do our best to keep our newsletter fast, fresh, and evolving.

As we said in the first issue, one of the primary reasons for the CRN newsletter is to highlight faculty research and results implementation. In this issue, Kelvin Sewake provides an orchid industry update and we recognize the efforts of CTAHR researchers Adelheid Kuehnle, Teresita Amore, Rasika Mudalige, and A. David Hieber who develop new products for the orchid industry. Additionally, we are going multi-media by tying this story to our expanded T-STAR website. The updated site now includes short videos that illustrate the benefits of your exciting research and implementation work to CTAHR supporters, USDA/CSREES, clients, students, etc. In addition to the video clip on orchids, look for Arnold Hara and his colleagues' video clip on pest management. If you would like your work profiled in future issues of CRN, or on our research websites, please let me know!

We also want to highlight the publications and other outputs coming from CTAHR faculty. We know you are productive, so let's share what you are doing with others. So far 19 faculty members have provided us their 2005 publishing output. We restricted the list to only published items, rather than *in press*. When you send your publications list to us, please only include items that are now in print. You can send in your list as often as you want and we will try to get it into CRN as soon as possible.

Finally, I wanted to share with you information on the national activities involving the land grant colleges and their administrators. Although these activities may not impact you in the short run, these national committees and federal lobbying efforts affect the land grant system, its funding, and its future infrastructure.

Thanks again for reading our newsletter, and as always, my door and email box are open to your thoughts. CY



Oncidium orchids are just one of the research commodities in Professor Kuehnle's laboratory.

Orchid Update

By Kelvin Sewake
County Extension Agent, PEPS
Hawaii Island

The Hawaii Orchid Industry is one of the fastest growing diversified agricultural industries in Hawaii today. In the past eight years, the wholesale value of orchid sales increased from a steady \$15.5 million in the late 1990's to \$22.8 million in 2004 (Hawaii Agricultural Statistics Service, 2005). Potted orchids make up the lion's share having a wholesale value of sales of \$18.4 million of the current total value. At \$22.8 million, orchids make up 24% of the total \$94.5 million for Hawaii's Floriculture and Nursery products. Across the U.S. and abroad, increased orchid consumption has spurred tremendous interest in activities such as orchid breeding, propagation, production, research and marketing. This trend creates many opportunities and great challenges for Hawaii's industry to remain competitive in a global business.

Hawaii's approximately 150 orchid growers/shippers are poised to accept the challenge of higher consumer demand and lower priced foreign products by organizing their efforts as a consolidated industry. Currently, the industry has four organizations across the state: Big Island Dendrobium Growers Association (BIDGA), the Dendrobium Growers Association of Hawaii (DOGAH), the West Hawaii Orchid Growers Association (WHOGA), and the Hawaii Orchid Growers Association (HOGA). The HOGA group is the potted orchid organization representing the wide diversity of orchid types, while the others represent primarily dendrobium orchids. Each works closely with CTAHR's research and extension faculty to address the many needs of the industry.

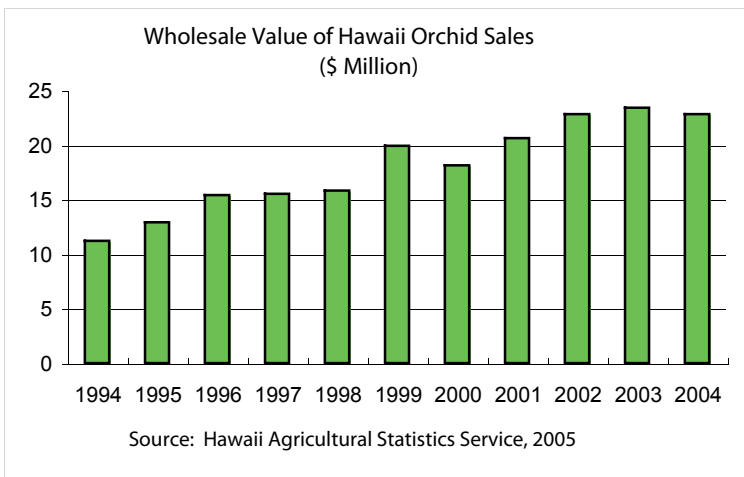
Since the Governor's Agriculture Coordinating Committee Industry Analysis process ceased in 1994, the needs of the industry have been articulated only intermittently. In order to get a handle on industry needs, USDA-PBARC's former director, Dr. Jerry Quisenberry, and Kelvin Sewake facilitated a January 14, 2000 meeting for the Big Island orchid growers, and Kelvin facilitated an April 20, 2000 meeting for BIDGA, and an October 5, 2000 meeting for HOGA. More recently, in April 2005, HOGA submitted a white paper to

Kelvin Sewake
Hometown: Wahiawa, Oahu, Hawaii
Joined CTAHR: 1985
Educational history: BS, Horticulture, University of Hawaii at Manoa; MS, Horticulture, University of Hawaii at Manoa.
Specialization: Floriculture, cut flowers
Current work: Extension education programs; research on chemical and cultural management of burrowing nematodes on Anthuriums; chemical control of foliar nematodes on Oncidiums; and control of orchid flowering.



CTAHR's Associate Director of Research urging action on issues of high priority to the growing potted orchids industry. The industry's high priority needs included long-term breeding, improved disease and pest control measures, optimizing production methodology, postharvest handling, and marketing reconnaissance and advice.

Understanding these needs is the first step in answering the question, "how can CTAHR work most effectively with the Orchid Industry?" CTAHR faculty are working closely with the industry and its leaders to develop short- and long-term plans, to develop appropriate research programs, and to provide effective extension educational programs. At each step, constant industry feedback must be taken into consideration and programs, by necessity, must be flexible in order to have the desired impacts both for CTAHR and the Orchid Industry. With those things in mind and with true cooperation, Hawaii's Orchid Industry can grow continuously and successfully.



Laboratory of Adelheid Kuehnle

Dr. Adelheid Kuehnle's program is one of the few publicly-funded flower breeding programs in the U.S. The program was established through the pioneering work of Professor H. Kamemoto in 1950. Molecular breeding was added when Dr. Kuehnle came on board in the late 1980s to create a unique program that combines both the greenhouse-based hybridizations with molecular genetics. Integral to the project in orchid breeding and tissue culture is Dr. Teresita Amore.

Dr. Kuehnle's program offers unique opportunities for students and post-docs alike in floriculture, with the mission to expose students to the full spectrum of flower breeding approaches. Integral to the program, in addition to the practical training, is developing skills in designing research, writing grant proposals, co-authoring publications, and learning management skills needed for future careers in academia or industry.

Most recently, working with the team profiled here, Dr. Kuehnle is looking at expanding the va-



Front: Adelheid Kuehnle, Back (l-r): Rasika Mudalige, A. David Hieber, and Teresita Amore.

riety of colors for *Oncidium* and *Dendrobium* in their T-STAR projects titled, "Molecular Breeding of *Oncidium*s Beyond Yellow" and "Genetic Regulation of Flower Traits in *Dendrobium*". Take a closer look at this project by watching the streaming video here: <http://www2.ctahr.hawaii.edu/t-star/TSTARHilitePage.htm>

Adelheid R. Kuehnle

Hometown: Honolulu, Hawaii

Joined CTAHR: 1988

Educational history: BA, Biology and German, Middlebury College VT; Ph.D., Plant breeding, Cornell University.

Specialization: Plant breeding

Current work: Dr. Kuehnle's research program emphasizes genetic, biochemical and tissue culture studies, and uses conventional breeding and molecular genetics to address varietal development of orchids and Anthuriums for cultivation and to further knowledge of tropical plant biology. Current projects include molecular cloning of floral pigment and morphology genes; floral pigment characterization; nematode and disease resistance; nuclear DNA content analysis by laser flow cytometry.

A. David Hieber

Hometown: Whakatane, New Zealand

Joined CTAHR: 2001

Educational history: B.Sc. Biochemistry, University of Otago, New Zealand; M.Sc(Hons), Biochemistry, University of Otago, New Zealand; Ph.D, Biochemistry, University of Auckland, New Zealand.

Specialization: Carotenoids

Current work: Investigating pigmentation in *Oncidium* orchids, sometimes called the 'Popcorn Orchid' or 'Dancing Ladies.' My research is focused on investigating flower color at the molecular level with the long term goal of developing novel varieties of *Oncidium* orchids for cut flower production.

Teresita D. Amore

Hometown: College, Los Baños, Laguna Philippines/Honolulu, Hawaii

Joined CTAHR: 1985

Educational history: BS Agriculture (Horticulture), University of the Philippines at Los Banos; MS, Horticulture, University of Hawaii at Manoa; PhD, Horticulture, University of Hawaii at Manoa.

Specialization: *Dendrobium* breeding

Current work: Breeding new *Dendrobium* varieties for industry; propagation of Anthurium selections via tissue culture for field evaluation in cooperators' farms and eventual industry release.

Rasika G. Mudalige

Hometown: Colombo, Sri Lanka

Joined CTAHR: 1997

Educational history: BS, Botany, University of Colombo, Sri Lanka; MS, Plant Physiology, Louisiana State University, Baton Rouge, Louisiana; Ph.D., Horticulture, University of Hawaii.

Specialization: Plant physiology and molecular biology

Current work: Researching on molecular basis of flower color and shape of *Dendrobium* orchids. Isolation of genetic elements needed to manipulate the anthocyanin biosynthetic pathway to achieve new and novel flower colors in orchids.



Evaluating fisheries management options in Hawaii using analytic hierarchy process (AHP)

Phyllis Long*, Jill Marston*, Stuart E. Nakamoto*, Sam Pocky*

*Department of Aquaculture and Fisheries Sciences, University of Hawaii at Hilo, 200 Wai'aleale Ave., Hilo, Hawaii 96720-4091

*Hawaii Laboratory Natural Resource Management, University of Hawaii at Hilo, 200 Wai'aleale Ave., Hilo, Hawaii 96720-4091

Received 22 November 2005; accepted 20 February 2006

Fisheries management is typically characterized by conflicts and often conflicting objectives. The Hawaii Pacific Regional Fisheries Management Council (HPRMFC) is the authority for managing fisheries resources near 2000 islands in Hawaii. The area of multiple objectives coupled with the heterogeneous composition of HPRMFC, makes a complex decision-making environment for fishery management in Hawaii. In the past, we applied the analytic hierarchy process (AHP) to evaluate the alternatives for management of multiple fisheries along adjacent islands. For this alternative, we developed a hierarchy to a sustainable (single) fishery using a questionnaire survey. Different to earlier questionnaires to other fisheries from all of the stakeholders involved in the decision-making process of HPRMFC, this survey is conducted using individuals. The overall ranking of objectives and making of alternatives is related to the state of being subjective versus all fish fisheries in the HPRMFC. There are no apparent differences in their results among the HPRMFC fisheries that have this experience. Management application of the AHP process to fishery management. The results of the present evaluation of the decision for being more of biological or economic conflict decision, are compared to conventional fisheries using the process for the advantage of fisheries, stakeholders and administrators. If you are interested, please contact the author for more information before the decision-making process starts. © 2006 Elsevier Science B.V. All rights reserved.

Keywords: HPRMFC; fisheries; decision-making

1. Introduction

Fisheries management is typically characterized by conflicts and often conflicting objectives. The Hawaii Pacific Regional Fisheries Management Council (HPRMFC) is the authority for managing fisheries resources near 2000 islands in Hawaii. The area of multiple objectives coupled with the heterogeneous composition of HPRMFC, makes a complex decision-making environment for fishery management in Hawaii. In the past, we applied the analytic hierarchy process (AHP) to evaluate the alternatives for management of multiple fisheries along adjacent islands. For this alternative, we developed a hierarchy to a sustainable (single) fishery using a questionnaire survey. Different to earlier questionnaires to other fisheries from all of the stakeholders involved in the decision-making process of HPRMFC, this survey is conducted using individuals. The overall ranking of objectives and making of alternatives is related to the state of being subjective versus all fish fisheries in the HPRMFC. There are no apparent differences in their results among the HPRMFC fisheries that have this experience. Management application of the AHP process to fishery management. The results of the present evaluation of the decision for being more of biological or economic conflict decision, are compared to conventional fisheries using the process for the advantage of fisheries, stakeholders and administrators. If you are interested, please contact the author for more information before the decision-making process starts. © 2006 Elsevier Science B.V. All rights reserved.

Faculty Output

Publications (including books, book chapters), patents and other science-based output

One of the purposes of this newsletter is to highlight the published articles, patents, and other work of your colleagues and yourself. Here is an eclectic mix of (un-edited) output collected directly from CTAHR faculty. Congratulations to those whose submitted citations and to all the CTAHR and non-CTAHR people who contributed to these exciting products! If you have something that has been published this year, and not “in press,” let us know and we will put it in our next issue – the more the merrier! And, if we have forgotten anyone, just let us know and we will make it right in future issues.

H.C. Skip Bittenbender (TPSS)

Bittenbender, H.C. 2005. History of cacao in Hawaii. *Proceedings of Hawaii Cacao Symposium* <http://www.hawaiicacao.com/> 1 July 2005.

Bittenbender, H.C. 2005. Coffee Basics: Fertilization and Pests. *Proceedings of Hawaii Coffee Assn.* on HCA web site <http://www.hawaiicoffeeassoc.org/>

Bittenbender, H.C. 2005. University of Hawaii/CTAHR 2004 Update. *Proceedings of Hawaii Coffee Assn.* on HCA web site <http://www.hawaiicoffeeassoc.org/>

Ken Grace (PEPS)

Husseneder, C., J.K. Grace, and D.E. Oishi. 2005. Recombinant bacteria for use in insect control. *Patent no. 6,926,889.* August 9, 2005.

Grace, J.K., and C.H.M. Tome. 2005. Resistance of the Indonesian woods bangkirai (*Shorea laevis*) and merbau (*Intsia palembanica*) to Formosan subterranean termite attack. *Sociobiology* 45(2): 503-509.

Husseneder, C., and J.K. Grace. 2005. Genetically engineered termite gut bacteria (*Enterobacter cloacae*) deliver and spread foreign genes in termite colonies. *Applied Microbiology and Biotechnology* 68: 360-367.

Husseneder, C., J.K. Grace, and D.E. Oishi. 2005. Use of genetically engineered *Escherichia coli* to monitor ingestion, loss, and transfer of bacteria in termites. *Current Microbiology* 50: 119-123.

Messenger, M.T., N.-Y. Su, C. Husseneder and J.K. Grace. 2005. Elimination and Reinvasion studies with *Coptotermes formosanus* (Isoptera: Rhinotermitidae) in Louisiana. *Journal of Economic Entomology* 98: 916-929.

Mankowski, M.E., H.K. Kaya, J.K. Grace and B. Sipes. 2005. Differential susceptibility of subterranean termite castes to entomopathogenic nematodes. *Biocontrol Science and Technology* 15: 367-377.

Haverty, M.I., R.J. Woodrow, L.J. Nelson, and J.K. Grace. 2005. Identification of termite species by the hydrocarbons in their feces. *Journal of Chemical Ecology* 31: 2119- 2151.

Chennat Gopalakrishnan (NREM)

Gopalakrishnan, C., Tortajada, C., and Biswas, A.K. eds. 2005. *Water Institutions: Policies, Performance and Prospects* (Springer).

Gopalakrishnan, C., J. Levy, K.W., Hipel. 2005 “Water Allocation among Multiple Stakeholders: Conflict Analysis of Waiahole Water Project, Hawaii.” *Int. J. Water Res. Devl.* 21:283-295.

Gopalakrishnan, C., W.A.R. Wickramasinghe, H.M. Gunatilake, P. Illukpitiya. 2005 “Estimating the Demand for Non-timber Forest Products among Rural Communities: A case study from the Sinharaja Rain Forest Region, Sri Lanka.”

Gopalakrishnan, C. 2005. “Water Allocation and Management in Hawaii: A Case of Institutional Entropy.” In: *Water Institutions: Policies, Performance, and Prospects*, eds. C. Gopalakrishnan, A.K. Biswas and C. Tortajada, Heidelberg: Springer, pp. 1-23

Gopalakrishnan, C. and J.K. Levy. 2005. Optimal Water Reallocation in Hawaii: Towards a Revised Water Code and a Revamped Water Commission. *Impact* 7(3):16-19.

Arnold Hara (PEPS)

Hara, A. H. and C. M. Jacobsen. 2005. Hot water immersion for surface disinfestations of *Maconellicoccus hirsutus* (Homoptera: Pseudococcidae). *J. Econ. Entomol.* 98: 284-288.

Hara, A. H. 2005. Disinfestation treatments for cut flowers and potted ornamentals, pp. 21-24, In K. Leonhardt and P. Nakao, eds., *Proceedings: Hawaii Floriculture Conference, Kahului, Hawaii, 2004*, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, CTAHR Proceedings April 2005 P-04/05.

John Hu (PEPS)

Sether, D. M., Melzer, M. J., Busto, J. L., Zee, F., and Hu, J. S. 2005. Diversity and mealybug transmissibility of Pineapple mealybug wilt associated viruses found in pineapple. *Plant Disease* 89:450-

Test your knowledge of CTAHR funding!

Q1. In the last fiscal year (FY 2005), how many extramural grants and contracts were received by CTAHR?

Q2. How many different faculty and staff brought in extramural grants and contracts to CTAHR in the last fiscal year?

Q3. Besides CTAHR Administrators, how many CTAHR faculty brought in at least \$100,000 in extramural grants and contracts during the last fiscal year?

Bernard Kratky (TPSS)

Kratky, B.A., G.T. Maehira, R.J. Cupples, and C.C. Bernabe. 2005. Non-circulating hydroponic methods for growing tomatoes. *Proceedings of the 32nd National Agriculture Plastics Congress*, March 5-8, 2005, Charleston, South Carolina.

Monto Kumagai (MBBE)

Production of lysosomal enzymes in plants by transient expression. *Patent No. 6,890,748*. Stephan J. Garger, Thomas H. Turpen, and Monto H. Kumagai (May 10, 2005).

Production of lysosomal enzymes in plants by transient expression. *Patent No. 6,887,696*. Stephan J. Garger, Thomas H. Turpen, and Monto H. Kumagai (May 3, 2005).

Production of lysosomal enzymes in plants by transient expression. *Patent No. 6,846,968*. Robert L. Erwin, Laurence K. Grill, Gregory P. Pogue, Thomas H. Turpen, and Monto H. Kumagai (January 25, 2005).

Ken Leonhardt (TPSS)

Leonhardt, K.W., P. Shingaki, P. Nakao and D. Oka. 2005. Screening for Warm-Temperature Tolerant Leucospermum (Proteaceae) Hybrids for Cultivation in Low-Elevation Climates in Hawaii. *Acta Horticulturae*, No. 683, pp. 223-232.

Caines, C. and K.W. Leonhardt. 2005. New Ornamental Ginger Cultivars for Hawaii Cut Flower Growers. *Proc: Hawaii Floriculture Conference*, CTAHR, pp. 25-27 & 80.

Leonhardt, K.W., P. Shingaki, P. Nakao, T. Jewell, T. Miguel and D. Oka. 2005. New Cultivars from the University of Hawaii Protea Research Project - 1999 to 2004. *Proc: Hawaii Floriculture Conference*, CTAHR, pp. 53-79.

Leonhardt, K.W., P. Shingaki, P. Nakao, T. Jewell, T. Miguel and D. Oka. 2005. New Protea Cultivars for Hawai'i Growers from the University of Hawai'i Protea Research Project - 1999 to 2004. CTAHR, NPH-11.

(this is essentially a reprint of the paper in the proceedings listed above, but produced as a separate "for sale" publication by CTAHR).

Vanzie-Canton, S. and K. Leonhardt. 2005. Abs & poster. Identifying a Suitable Medium for the In Vitro Establishment and Multiplication of *Fatsyhedera lisei*. *CTAHR Student Research Symposium*. CTAHR.

Teng, E., P.L. Nakao, J.S. Lichty and K.W. Leonhardt. 2005. Abs & poster. Use of GA3 and Cold Temperature Treatments to Induce Flowering in *Dracaena*. *CTAHR Student Research Symposium*. CTAHR.

Littleton, T. and K. Leonhardt. 2005. Abs & poster. Influence of Wounding, Terminality, and Auxin Concentration on the Rooting of Stem Cuttings of Four *Leucospermum* Species. *CTAHR Student Research Symposium*. CTAHR.

Miguel, T., K.W. Leonhardt and J.T. Kunisaki. 2005. Abs & poster. In Vitro Establishment of Protea 'Venus' and Protea aristata. *CTAHR Student Research Symposium*. CTAHR.

Miguel, T., K.W. Leonhardt and Y. Sagawa. Abs & poster. Polyploid Induction of Orchids Using Oryzalin for Stud Plant Improvement. 2005. Abs & poster. *CTAHR Student Research Symposium*. CTAHR.

Leonhardt, K.W. and P. Nakao. 2005. Ed's. *Proc: Hawaii Floriculture Conference*, CTAHR, P-04/05. 115 p.

PingSun Leung (MBBE)

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.

J. Cai, P.S. Leung, M. Pan and S. Pooley. 2005. "Economic linkage impacts of Hawaii's longline fishing regulations," *Fisheries Research*, 74:234-242.

R. Yu and P.S. Leung. 2005. "Optimal harvesting strategies for a multi-pond and multi-cycle shrimp operation: a practical network model," *Mathematics and Computers in Simulation*, 68(4):339-354.

J. Cai and P.S. Leung. 2005. "An alternative interpretation of the 'pure' linkage measures," *Annals of Regional Science*, 39(1):49-54.

J. Cai, P.S. Leung, M. Pan and S. Pooley. 2005. Linkage of Fisheries Sectors to Hawaii's Economy and Economic Impacts of Longline Fishing Regulations, Pelagic Fisheries Research Program, *JIMAR Contribution* 05-355, 24 pp.

L.E. Kam, P.S. Leung and C.S. Tamaru. Direct Marketing Hawaii's Freshwater Ornamental Aquaculture Products. Aquafarmer Information Sheet #15, *Center for Tropical and Subtropical Aquaculture*, March 2005, 15pp.

Russell Messing (PEPS)

Rhinds, M. & R. Messing. 2005. Spatial and temporal density dependence in a population of melon aphid, *Aphis gossypii* Glover (Homoptera: Aphididae), on established and sentinel taro plants. *Applied Entomology and Zoology* 40: 273-282.

Praitbha Nerurkar (HNFAS)

Nerurkar P.V., Pearson L., Efirid J., Adeli K., Theriault A. and Nerurkar V.R. Inhibition of microsomal triglyceride transfer protein (MTP) gene expression and ApoB secretion by bitter melon in HepG2 Cells. *Journal of Nutrition*, 2005; 135: 702-706.

UH Kaunana

Alex Salkever, editor, has just sent word that the offices of Jim Gaines (interim Vice President for Research for the UH system) and Gary Olander (Vice Chancellor for Research and Graduate Education) will be assembling a new glossy science publication for the University of Hawaii system. *Kaunana*, meaning “discover,” will be highlighting the stories of cutting-edge work by UH researchers. The Research Corporation of the University of Hawaii (RCUH) and Office of Technology Transfer and Economic Development (OTTED) will also be partners in this effort. If you have some ideas that you would like to pitch to Alex, call him at 808.734.1582 or email him at <alex.salkever@gmail.com>. Alternatively, give me a call and we can set up a meeting with the CTAHR Office of Communication Services (OCS) and brainstorm the best way to present your ideas.

Marcia Morgado (FCS)

Morgado, M.A. (2005). Refashioning the Hawaiian shirt. In Damhorst, M.L., Michelman, S.O., & Miller-Stillman, K.A. (Eds.). (pp. 415-420). The meanings of dress. New York: Fairchild Books.

Q.X. Li (MBBE)

Stroncek, J.; Denery, J.R.; Li, Q.X. 2005. Relationship between gene expression and cell metabolism in the marine bacterium *Streptomyces tenjimariensis*. *J. Young Investigators* (online) 12(4): <http://www.jyi.org/research/re.php?id=142>.

Pelleguer, J.-L.; Chen, S.-W. W.; Karu, A.E.; Li, Q.X.; Roberts, V.A. 2005. Structural basis for preferential binding of non-ortho-substituted polychlorinated biphenyls by the monoclonal antibody S2B1. *J. Mol. Recog.* 18:282-294.

Wang, D.; Atkinson, S.; Hoover-Miller, A.; Li, Q.X. 2005. Analysis of organochlorines in harbor seal tissue samples from Alaska using gas chromatography/ion trap mass spectrometry by an isotopic dilution technique. *Rapid Communication in Mass Spectrometry*. 19(13): 1815-1821.

Rima, J.; Aoun, E.; Hanna, K.; Li, Q.X. 2005. Degradation of phenol, into mineral compounds, in aqueous solutions using zero-valent iron powder (ZVIP). *J. Phys. IV France* 124: 81-89.

Shelver, W.L.; Keum, Y.-S.; Kim, H.-J.; Rutherford, Drew; Hakk, Heldur H.; Bergman, Ake; Li, Q.X. 2005. Hapten syntheses and antibody generation for the development of polybrominated flame retardants ELISA. *J. Agric. Food Chem.* 53(10): 840-8847.

Shelver, W.L.; Kim, H.-J.; Li, Q.X. 2005. Development of monoclonal antibody based ELISA for the -adrenergic agonist zilpaterol. *J. Agric. Food Chem.* 53: 3273-3280.

Keum, Y.-S.; Li, Q.X. 2005. Reductive debromination of polybrominated diphenyl ethers by zero-valent Iron. *Environ. Sci. Technol.* 39(7):2280-2286.

Delanoy, G.; Li, Q.X.; Yu, J. 2005. Activity and stability of laccase in conjugation with chitosan. *Int'l J. of Biological Macromolecules*. 35(1-2): 89-95.

Hamilton McCubbin (COF)

McCubbin, L., and McCubbin, H. (2005). “Culture and Ethnic Identity in Family Resilience: Dynamic Processes in Trauma and Transformation of Indigenous People,” in Michael Unger (Ed), *Pathways to Resilience*, Thousand Oaks, CA, Sage.

Dan Rubinoff (PEPS)

Rubinoff, D. and W. P. Haines. 2005. Web-spinning caterpillar stalks snails. *Science*. 309:575.

Josef Seifert (PEPS)

J. Seifert and J. Stollberg (2005) Antagonism of a neonicotinoid insecticide imidacloprid at neuromuscular receptors. *Environm. Tox. Pharmacol.* 20, 18-21.

J. Seifert (2005) Neonicotinoids. In *Encyclopedia of Toxicology*, pp.196-200. Elsevier, 2nd Edition.

J. Seifert (2005) Nithiazine. In *Encyclopedia of Toxicology*, pp. 228-229. Elsevier, 2nd Edition.

J. Seifert and D. Schooley (2005) Allatotropin-increased biosynthesis of juvenile hormones (JH) from L-isoleucine and L-methionine by corpora allata of *Manduca sexta*. *Book of Abstract, 229th ACS National Meeting, Agrochem. Div.*, paper # 60.

Mel Wong (TPSS)

Wong, M. 2005. Visual symptoms of plant nutrient deficiencies in nursery and landscape plants. Soil and Crop Management, University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, *SCM-10*. January 2005.

Wong, M. 2005. Use of soil amendments in landscape plantings. Soil and Crop Management, University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, *SCM-11*. January 2005.

Wong, M. 2005. Salinity effects in nursery and landscape plants. Soil and Crop Management, University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, *SCM-12*. January 2005.

Mark Wright (PEPS)

Wright, M.G. and Diez, J.M. 2005. Coconut scale (Aspidiotus destructor: Diaspididae) seasonal occurrence, dispersion and sampling on banana in Hawai'i. *International Journal of Tropical Insect Science* 25: 80-85.

Young, C.A. and Wright, M.G. 2005. Seasonal and spatial distribution of banana aphids in banana plantations on Oahu. *Proceedings of the Hawaiian Entomological Society* 37: 73-80.

Vorsino, A., Taniguchi, G.Y. and Wright, M.G. 2005. *Opogona sacchari* (Lepidoptera: Tineidae), a new pest of pineapple in Hawai'i. *Proceedings of the Hawaiian Entomological Society* 37: 97-98.

Sahar Zaghoul (HNFAS)

Tucker KL, Maras J, Champagne C, Connell C, Goolsby S, Weber J, Zaghoul S, Carithers T, Bogle ML. A regional food-frequency questionnaire for the US Mississippi Delta. *Public Health Nutr.* 2005 Feb;8(1):87-96.

Answers to our pop-quiz

Q1. In the last fiscal year (FY 2005), how many extramural grants and contracts were received by CTAHR?

A1. CTAHR received 133 extramural grants and contracts for a total of \$16,598,848 during the fiscal year ending June 30, 2005.

Q2. How many different faculty and staff brought in extramural grants and contracts to CTAHR in the last fiscal year?

A2. Fifty-three (53) faculty and staff (out of 191 total) brought in extramural grants and contracts to CTAHR.

Q3. Besides CTAHR Administrators, how many CTAHR faculty brought in at least \$100,000 in extramural grants and contracts during the last fiscal year?

A3. 21 CTAHR faculty received at least \$100,000 in 34 research and 20 non-research (training) extramural grants and contracts.

National and Regional Connectivity

One of the jobs of the Associate Director of Research at CTAHR is to be connected to national activities that affect the direction of research and funding of land grants. I periodically travel to regional and national meetings, and I want to make a habit of sharing with you what I am observing and learning. As you will see, there is a soup of acronyms out there to learn! If you have any questions about this or other issues at the national level, please contact me.

CTAHR participates in the Western Association of Agricultural Experiment Station Directors (WAAESD), one of four such Regional Associations <http://www.colostate.edu/Orgs/WAAESD/otherregion.html>. WAAESD represents the administrators of the State Agricultural Experiment Stations in the Western Region and provides a forum for dissemination of information, discussion, and debate on matters of common concern to members and guests. Through WAAESD business meetings, the views of the directors may be transmitted to the National Association of State Universities and Land Grant Colleges (NASULGC) <http://www.nasulgc.org/>, the Experiment Station Committee on Organization and Policy (ESCOP) <http://www.cals.ncsu.edu:8050/escop/>, the Experiment Station Section, and the Cooperative State Research Education and Extension Service (CSREES) <http://www.csrees.usda.gov/>.

The WAAESD holds three annual meetings, each with a discreet purpose. The spring meeting consists only of Western Region Agricultural Experiment Station Directors. The summer meeting is held jointly with the Extension and Academic Program directors. The fall meeting is a opportunity to bring regional AES issues to the attention of

the national Experiment Station Directors.

As the Associate Director of Hawaii Agricultural Experiment Station, I represent CTAHR at each of these meetings. The discussions at these meetings are extremely valuable as we learn from each others' experiences. Recently, the spring meeting took place at Riverside, California on March 21-23. The minutes of the meeting can be found at <http://www.colostate.edu/Orgs/WAAESD/WAAESD/minutes.html>.

The joint summer meeting took place in Santa Fe, New Mexico on July 10-13. Find the agenda, meeting briefs, and minutes at <http://www.colostate.edu/Orgs/WAAESD/AESGenInfo.html>. One important advantage of having a joint meeting with directors from Extension and Academic Programs is the opportunity to facilitate the program integration of all three functional areas of a land grant university. During the joint summer meeting, the directors review and approve all multi-state projects. This year, hot topics included federal formula funding, rural development, water and energy issues in the western region. This year's fall meeting was scheduled to take place last week in San Antonio, TX, but was cancelled due to the threat of Hurricane Rita.

CTAHR works to maintain another critical relationship with USDA's Cooperative State Research, Education, and Extension Service (CSREES). CSREES is the major USDA agency that handles federal funding and programs to land grant universities. On the research side, CSREES is charged with managing competitive grant program <http://www.csrees.usda.gov/about/offices/compprogs.html>, special grant program, and formula funds <http://www.csrees.usda.gov/business/awards/formula.html>. These three programs are the major sources of funds that support our research activities. Because of Congressional mandates, CSREES is responsible for a majority of the paper

work that is required to account for these federal funds. As researchers, you are familiar with the AD-416 and 417 forms, which establish any new project, and the AD-421 annual progress report. But, did you know that the college is accountable as well? In addition, the College must file financial reports, and station Plan of Work (every five years), and annual Plan of Work report. We will provide more descriptions for each of these programs in the coming months.

New Funding Opportunities

Doug Vincent has been looking for funding for projects that fit the needs of CTAHR clients and the interests of faculty. Here is the latest finds. Please contact Doug or Brian Turano for assistance on preparing your grant application. Please also be mindful of deadlines. It is imperative that the CTAHR fiscal office and the UH Office of Research Services has sufficient time to review your proposals.

Hawaii Department of Agriculture

Agriculture Research Program, FY 2006

Deadline: October 16, 2005

http://www.ctahr.hawaii.edu/vincent/HDOA/HDOA_RFA_2005.pdf

U.S. Department of Agriculture

National Science Foundation

Interagency Microbial Observatories Program

Deadline: October 27, 2005

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1460>

U.S. Department of Agriculture

International Science and Education Competitive Grants

Deadline: October 31, 2005

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1240>

U.S. Environmental Protection Agency

Environmental Education Grants Program

Deadline: November 23, 2005

http://www.epa.gov/enviroed/grants_sol2006.html

U.S. Department of Agriculture

Children, Youth, and Families at Risk Sustainable Community Projects

Deadline: December 1, 2005

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1501>

U.S. Department of Agriculture

Western Integrated Pest Management Program

Deadline: December 15, 2005

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1101>

U.S. Department of Agriculture

Assistive Technology Program for Farmers with Disabilities

Deadline: December 23, 2005

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1061>

U.S. Department of Agriculture

Higher Education Challenge Grants

Deadline: February 2, 2006

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1082>

Coming up next in CRN!

Doug Vincent is going to provide us with a thorough breakdown of our funds, grants, and overhead in the next issue. We'll also be profiling another set of faculty and staff so you can get to know your colleagues better. *See you next month!*

*CY Hu,
Associate Dean and
Associate Director for Research*