

CTAHR RESEARCH NEWS

October 2006
Volume 2, Issue 8

The life and
times of DrB

Bioenergy
is hot

Long range
grant
opportunities



Jim Brewbaker shows a cornucopia of products emanating from corn.



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From the Associate Dean and Associate Director for Research

CTAHR has many compelling stories to tell and we are excited to share them in the *CTAHR Research News (CRN)*. Last month we introduced you to one of the longest serving faculty members in our college, Dr. Goro Uehara, who started with CTAHR in November 1959. This month it is my pleasure to introduce to you another senior member of our faculty, Dr. James Brewbaker, known to most as “DrB.” DrB celebrated his 80th birthday earlier this month, and he also celebrated his 45th year of service at CTAHR. DrB single-handedly established two extremely successful breeding programs that are internationally recognized: tropical sweet corn and *Leucaena*, a nitrogen-fixing tree. DrB and Goro share three common traits: a love for conducting research that benefits humanity, a passion for educating the next generation of scientists, and no interest in retiring. These two researchers are great role models and how truly wonderful for CTAHR to have these top tier faculty members among our ranks!

Although oil prices have dropped below \$60/barrel recently, it is still very high compared to the \$12/barrel price tag back in 2000. Not surprisingly, renewable energy has become a hot topic globally, and biomass energy (ethanol and biodiesel) research is now a top priority for many land grant universities across the nation. University of California, Davis is adding 12 new faculty members to their bioengineering program alone! CTAHR has also made this our top priority in our strategic plan with a modest investment of two new positions and will again submit a

biomass energy initiative to be included in the UHM federal agenda this year. This initiative is a joint program with SOEST, and was selected by the University as the top priority last year. Several faculty members – including Goro and DrB – are actively involved in developing this initiative. Brian Turano attended a national conference on renewable energy and provides an excellent summary bringing us up to date on this issue.

Doug Vincent loads us up with some long-range grant opportunities and his “Research Calabash” is full of important information. We also provide a brief report on our latest Board of Advisors meeting. Please continue to keep us informed of your exciting work and continue to send us the full citations for your new publications. I am looking for faculty and staff to cover in upcoming issues of *CRN*, so please contact me if you are interested.



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King of Corn, Dr. James L. Brewbaker

James Brewbaker
Professor, Tropical Plant and Soil Science (TPSS)



DrB talks corn syrup to corn field day attendees.

In October 2006 Professor James L. Brewbaker (“DrB”) celebrated 45 years at CTAHR and his 80th birthday by submitting another grant request for tropical crop improvement. What keeps him going? “Genes,” he says, expressing thanks to an agronomist father and a musician mother for his mutual love of plant breeding and music. It’s as easy to get him talking about his role as Harold Hill (Music Man), or as a soldier in “Aida,” or violinist with Cornell’s symphony, as it is to talk corn. DrB cites Professor Arne Muntzing of University Lund, Sweden – where he post-doc’d – for urging him to recognize science as an often-cruel taskmaster and find creative relief in music. Jim has sung in more than 30 musicals and operas in Honolulu and directed choirs around the world in finding this “relief”

DrB was born the year his father, Harvey, received his PhD in plant breeding at the University of Minnesota. He later moved the family to Longmont, Colorado, where he served as director of sugar beet research. When he retired, Harvey worked three years in Iran, three years in Yugoslavia and a year in Israel on sugarbeets, setting precedent for DrB’s apparent distaste for retirement.

Although DrB started college while in the Navy as an engineer and mathematician, he gravitated naturally to crop improvement after working the summers of 1947 and 1948 at Cornell and Cal Tech. He credits George Beadle of Cal Tech (later a Nobel Laureate) with the inspiration to be a geneticist, and his major professor at Cornell, Sanford S. Atwood (later President of Emory University) with the motivation to put genetics to work in the service of mankind as a plant breeder.

The tropical influence came during DrB’s two-year stint as member of Cornell’s team at U. Philippines Los Banos, where he worked on the “rico” (rice and corn) team of Dioscoro Umali (a fellow Cornellian and later Vice-President of U. Philippines) and H. K. Hayes (Harvey Brewbaker’s professor at Minnesota). At Los Banos, he married the organist of the choir he directed, Helen, who later became mother of four of his children and who was lost to cancer in 1969. Following the Philippine stint he spent five years as radiation geneticist at Brookhaven National Lab (DNL) in Upton, New York.

Jim Gilbert was chair of Horticulture at the College of Tropical Agriculture at UH (forerunner of CTAHR) in 1961, and had come to BNL to interview DrB, citing the presence on his staff of scholars like Harry Kamemoto (fellow student at Cornell with DrB) and Tosh Murashige. The promise of working in tropical agriculture with both grains and legumes (his PhD had been on white clover) and his multinational interests lured him to Honolulu in October 1961. Soon he completed his first book, *Agricultural Genetics*, and built major programs on isozyme genetics, radiation botany and fruit irradiation.

With a backward glance in 2006, DrB speaks first of the “wonderful, frustrating, inspiring, multinational” graduate students (50 of them) whom he has served as major professor. Regularly he mails the “DrB Newsletter” to these scholars and to his many post-docs, visiting scientists and minors. He has “sabbaticked” eleven times, almost always taking along his crops of corn or leucaena. These “vacations” include Kasetsart, UPLB, Cornell, CIAT, CIMMYT, IITA, ANU, UQ, Pingtung, Taiwan Forerstry Res. Inst., and most recently the Queensland Dept. Primary Industry (corn breeding at Tinaroo). He encourages all faculty to take sabbatics!

At his 18th Corn Field Day at Waimanalo this fall, DrB spoke of the art, science and fun of plant breeding, showing off a hundred or so of his corn genetic lines. One handout listed the 108 publications on corn from his program at CTAHR, that included books, *Corn Production in the Tropics—the Hawaii Experience*, and his spreadsheet-based textbooks on “Experimental Design” and “Quantitative Genetics.” His 265 publications ranges surprisingly from bananas and pineapples to clovers and koa trees and he takes particular pride in publications of his students, often cited as primordial in relevant science; most recently an article in “Nature” by Ray Ming on papaya genetics. He believes that internationally recognized publications are the one true mark of doctoral scholarship.

DrB was honored this September with lifetime membership in the Hawaii Crop Improvement Association (HCIA) that he founded in 1971. During his first decade at CTAHR, he instituted corn genetic research and recognized the potential of Hawaii as a center for seed science, which is now Hawaii’s third-largest agricultural industry. He founded CTAHR’s Seed Industry Council in 1963, organized the first Seed Industry Conference in 1969 and then served 15 years as Executive Secretary of HCIA. During these years he also headed Hawaii’s Botanic Society, Sigma Xi, the Hawaii Academy of Science, and founded and presided for a decade over the international Nitrogen Fixing Tree Association. His work with tropical trees led to his most favored award. In 1987, the King of Sweden presented him with the “International Inventors Award” for his research on tropical legume trees of the genus *Leucaena*.

While serving full-time on CTAHR’s research faculty, DrB initiated and taught four courses. These included “Experimental Design,” “Radiation Biology” (later “Biochemical Genetics”), “Quantitative Genetics” and “Tropical Seed Science.” His supersweet tropical corn hybrids are familiar in Hawaii, but he speaks with greater enthusiasm of the impact of corn research throughout the tropics. In Thailand alone, 150,000 acres of sweet corn annually have Hawaiian “roots,” and examples are found throughout the tropics—easily identifiable, he notes, as he

used a supersweet gene, *brittle-1*, that no other breeders have used. But he also expressed pride in the work on the leucaenas (he and students collected 1100 varieties from Latin America). He cites a recent report suggesting that over a billion trees of his best varieties have been planted in India alone. Ten tons of CTAHR-derived seed are distributed annually to Indian growers. And 220,000 acres of pastures in Australia are supplemented with improved leucaenas.

DrB says attitudes such as, “don’t rock the boat,” have frustrated his research efforts in Hawaii. Yet, he



DrB is joined at the 2006 Corn Field Day by his graduates Dr. Xuebo Shi (far left) and Dr. Wei Guo Sun.

recognizes that Hawaii offers the unique opportunity to conduct creative research outdoors every day of the year. This is apparent from any review of his 40 years of corn research, averaging 15 trials per year, at Waimanalo Research Station. “Do the test tube and petri dish research in Montana or Yale,” he says, “and exploit our competitive advantage to work under the sun.” And, DrB’s sun has yet to set, as he cites bioenergy as one of CTAHR’s most exciting challenges for the future, and thus submitted his latest grant request this month.

Want to learn more about the history of the Hawaii Crop Improvement Association? Click here, the read DrB’s recollections.

Dawn of the renewable energy era

By Brian Turano
CTAHR Grant Specialist

I recently attended the “Advancing Renewable Energy” conference in St. Louis, Missouri, jointly sponsored by the U.S. Department of Energy and the Department of Agriculture. The atmosphere was more akin to a political rally than a scientific conference, with jumbo video screens and booming, upbeat music between speakers. The 1,500 attendees heard a repeating mantra: renewable energy is good for the environment, good for the economy, and good for national security. On the down-side: domestic oil and natural gas production are past their peaks, and relying on foreign governments that potentially support terrorists for oil is a bad idea.

The conference speakers were a who’s-who from government, NGOs (non-governmental organizations), private industry, and venture capital, including: The President of the United States George W. Bush, Samuel Bodman (Secretary of Energy), Mike Johanns (Secretary of Agriculture), Vinod Khosla (Sun Microsystems), Senator Jim Talent (Missouri), Patricia Woertz (CEO, Archer Daniels Midland Company), Charles Holliday, Jr. (CEO, DuPont), Robert Fraley (Monsanto), Don Endres (CEO, VeraSun), Donald Paul (Chevron), and James Woolsey.

The President stated that tax credits for R&D, hybrid vehicle purchases, ethanol, and alternative fuel stations will continue. Incentives for natural gas and oil exploration, clean coal, and nuclear are part of the new energy bill. Mike Johanns announced \$17 million for 17 biomass projects. Sam Bodman said DOE will invest \$360 million for three biorefineries and \$250 million for two bioenergy research centers. Dupont, ADM, Monsanto, and Chevron will significantly increase their

R&D budgets in this area. Exhibit highlights included Dupont’s biobased rugs and textiles that could replace petroleum based products; GM’s flex fuel SUV; and U.S. Forest Service’s BioMax 15 that produces 15 kW of electricity by gasifying wood chips.

Speakers delivered interesting statistics:

- 100 ethanol plants in the U.S. produce 5 billion gallons of ethanol per year and is forecasted to reach 8 billion gallons by 2008;
- 14% of U.S. corn is used for ethanol production;
- Average corn yield is 155 bushels per acre and predicted to reach 300 bushels per acre by 2030;
- 85 biodiesel plants are in operation and 65 are under construction;
- 75 million gallons of biodiesel are produced (2006); and
- 200 million gallons of biodiesel will be produced by 2008.



The general consensus was that the future will see: a technical breakthrough for cellulosic ethanol in the next five years; corn crop yields doubling in size in the next decade; flex fuel vehicles should be the norm; a push to adopt E85; and a continued need to improve the capacity of the power grid.

A clear message from the conference was that the “Age of Renewable Energy” has begun. Mike Johanns said it succinctly: “...energy by the bushel, not by the barrel.” The reasons driving this initiative are the vast capital investments by public and private sectors, the dwindling domestic petroleum and natural gas reserves, the growth of terrorism, and global warming. The renewable energy train has left the station but the question is will Hawaii take advantage of this epic opportunity? Stay tuned!

CTAHR's Board of Advisors

By C.Y. Hu

CTAHR Associate Dean and Associate Director for Research

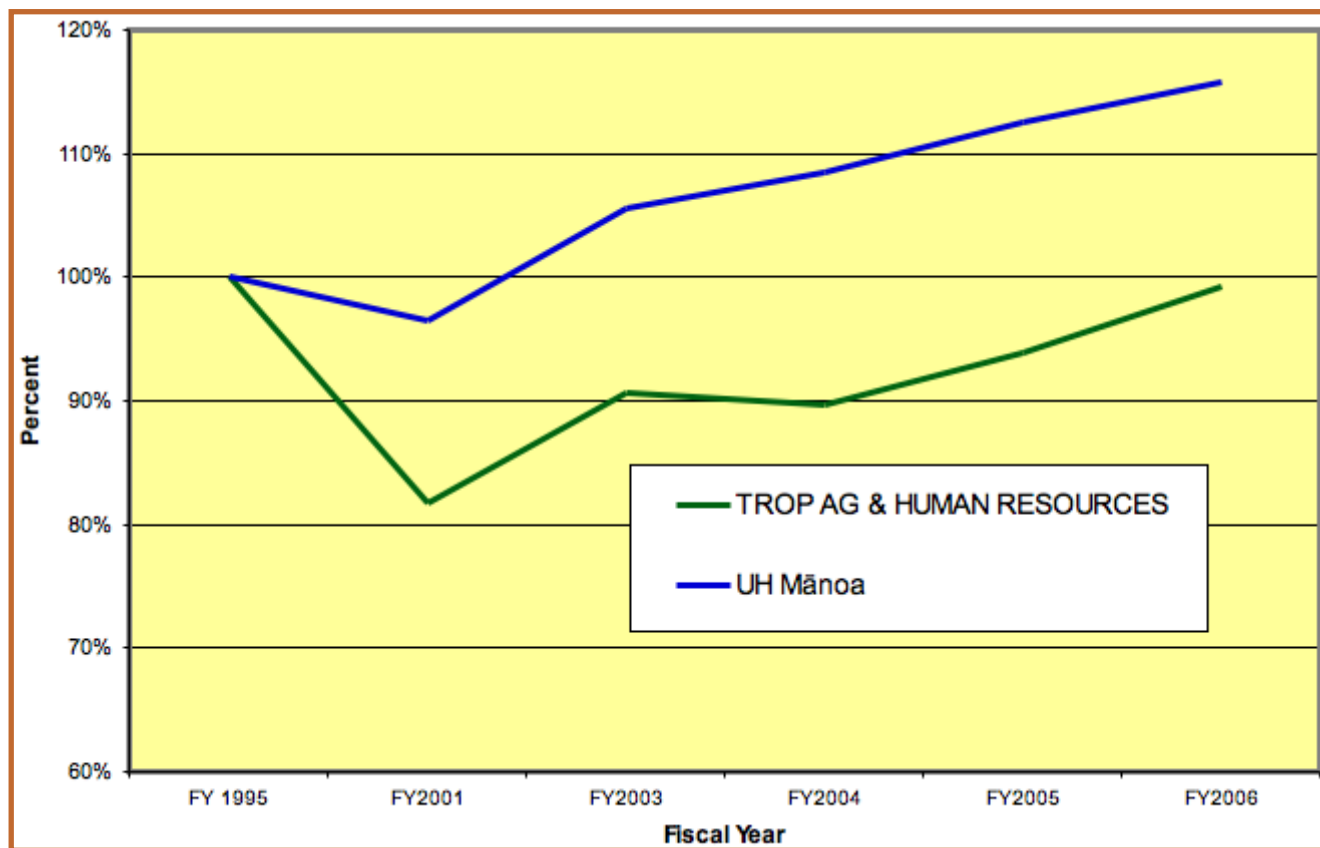
Our College's Board of Advisors (BOA) was established to guide the strategic directions of our college. This guidance involves providing general advice on: the education, research and extension programs, the administrative and fiscal functions, and the student services and promotional operations of the college. Secondly, the Board also ensures that the College leadership understands the current and future higher education needs of its stakeholders. Lastly, the Board assists in obtaining public and private support for the College to provide responsive higher education programs to the stakeholders. The BOA meets twice a year, with the most recent meeting held last week on campus. A total of twelve advisors attended, including the newest member, Senator Russell Kokubun, from the Big Island.

Dean Hashimoto began the meeting with a "State of the College" presentation and biennium budget planning, and then described our sustainable bioenergy initiative. Wayne Nishijima followed with an overview of our strategic plan/implementation plan; CY Hu described the processes and timelines of industry

analyses which will be launched soon; and Dale Uno solicited suggestions and comments on the marketing and promotion of CTAHR. During lunch, Lani Starkey, UH Foundation director of estate and gift planning, provided excellent information on taxes, retirement and giving for our advisors. In the afternoon session, updates on the agribusiness incubator program and the 2007 award banquet and centennial celebration were presented by Steven Chiang and Dale Uno/Luella Costales, respectively.

One particular slide (see below), from Dean Hashimoto's the "State of College" presentation sticks in my mind. It illustrates that since 1995, UHM has seen an increase of its budget of 11%; while CTAHR budget is still below its peak of 1995. If we were to receive the same increase as the rest of campus, that would mean an addition of more than \$2 million to our base budget. Something for us to ponder...

Additional information on our Board of Advisors can be found at: <http://www.ctahr.hawaii.edu/ctahr2001/AboutUs/BoardOfAdvisors.html>



Research Calabash

CTAHR Receives Flood Mitigation Grant

Through the efforts of our Congressional delegation, CTAHR has received a \$2,779,920 grant from USDA CSREES to mitigate the effects of the October 30, 2004 flash flood. It included 64 different items and each individual had to have a specific justification. The breakdown for CTAHR was as follows: \$2,533,708 for non-expendable equipment; \$114,300 for materials and supplies; \$59,999 for salaries and fringes – mostly to pay for technician or graduate student time to help re-create items lost during the flood and its aftermath; and \$3,600 for hauling.

As you recall, the 2004 flood struck 7 out of 8 CTAHR buildings on campus. Sherman Lab and Ag Sciences were the most damaged, but instrumentation in other CTAHR buildings were damaged due to prolonged periods of power outages or erratic power, lack of air conditioning and the high humidity that resulted from these events. The flood relief grant supports items in departments housed in 6 of the 8 damaged buildings. (The Food Science and Technology, building although damaged by the flood, is not receiving any support from this grant. Five out of six CTAHR departments are receiving support, as well as the CTAHR overall infrastructure. A few examples:

- The grant will be replacing 8 plant growth chambers in Pope Laboratory -- these are shared among NREM, PEPS, and TPSS.
- The grant will be replacing several key pieces of instrumentation for the Agricultural Diagnostic and Service Center.
- The grant will be replacing the file server and 16 computer work stations for the CTAHR Computer Lab in Ag Sciences.
- The grant will be replacing the CTAHR file server and tape backup server to provide for better reliability.
- The grant will be replacing the Liquid Chromatography - Mass Spectroscopy Unit in MBBE.

The [grant submission](#) and [budget justifications](#) are online.

CRIS AD-421 Annual Reports due November 15, 2006

It is time again to enter annual progress or termination reports via the CRIS AD-421 for USDA-funded Hatch, McIntire-Stennis, Special or Competitive Grants. The AD-421 forms are submitted on-line, click on [AD-421](#) on the left side, and follow the web site to find a listing of projects for you that require action. [Updated instructions](#) and a list of projects are available on-line.

CRIS progress and termination reports (AD-421 forms) are widely used by scientists, administrators, State and Federal officials and legislative offices. The CRIS searchable technical database is available online to the public worldwide.

<http://cris.csrees.usda.gov/menu.html>.

The AD-421 report is the OFFICIAL record of any research funded by USDA, including Hatch, Animal Health, McIntire-Stennis, Special and Competitive Grants. The quality and timeliness of the AD-421 report reflects strongly on the research, the investigator(s), and the reporting organization, and can have a significant influence on State and Federal funding decisions affecting research.

Submission of Proposals via Grants.gov

More and more federal funding agencies are requiring on-line submission of proposals using Grants.gov. The first step in using Grants.gov for proposal submission is to download and install the [PureEdge Viewer](#). For [Non-Windows Users](#), alternatives exist. Once PureEdge Viewer is installed, and you've found the program for your application – click on the link for that program. You will be taken to the Synopsis page which provides information about the program. Click on “How to Apply” to download instructions and the SF 424 application forms. Click “Download Application Package” and the forms should be automatically uploaded into your PureEdge Reader. Complete the forms, add the attachments and you are ready for submission via Grants.gov. It should be noted that you do not submit the proposal to Grants.gov. Rather the Authorized Institutional Official

more research calabash

(AOR) will submit the proposal on your behalf. The University of Hawaii Office of Research Services is our AOR. To submit your proposal to ORS, there are two steps – one paper and one electronic. The paper step is to complete the [ORS Form 5](#), conduct the appropriate reviews and collect approval signatures. The electronic step is to [upload your completed Grants.gov final proposal](#) (in .xfd format) to ORS for review. Once the ORS Form 5 is reviewed, ORS will submit your proposal to Grants.gov. An illustrated [Grants.gov User Guide](#) can be downloaded.

Changes to the USDA CSREES Grant Application Process

USDA CSREES has instituted significant changes to its [FY 2007 Grant Application process](#).

- All applications will use the new SF 424 applications forms, including T-STAR grants.
- Nearly all USDA CSREES programs will accept [on-line submissions only](#) via Grants.gov. T-STAR grants accepted for funding will still be submitted as paper grants this year. For the FY 2008 funding cycle, T-STAR grants will be submitted electronically.
- All attachments to SF 424 grant application forms must be submitted in portable document format (.pdf, Adobe Acrobat)
- Many programs in the National Research Initiative Competitive Grants Program are now **requiring** Letters of Intent. A list of [NRI topic areas](#) and due dates is provided.

USDA CSREES Seeking Proposals to Revitalize Iraq Agricultural Extension

Applications are being requested for the USDA CSREES [Iraq Agricultural Extension Revitalization Program](#). By rebuilding the skills of Iraqi extension experts so that they may better serve the needs of farmers, processors, and marketers, the project will foster a healthy agricultural sector that contributes to national stability. The closing date for submission is **November 8, 2006**. The [Iraq RFA](#) is available online. Based upon CTAHR's previous work in Iraq, we are well positioned to seek funding from this program. We have a team of individuals preparing a proposal, but if you are interested in participating in the project, contact [Brian Turano](#), our grants specialist.

USDA CSREES and Department of Energy Seeking Biomass Genomics Proposals

Applications are being sought by a joint USDA-DOE project to conduct a fundamental research program in biomass genomics to provide the scientific foundation to facilitate the use of woody plant tissue, specifically lignocellulosic materials for bioenergy and biofuels. The deadline for **pre-applications is 4:30 pm Eastern Time, November 13, 2006**. Applications are due January, 30, 2007. The [RFA](#) and [press release](#) about the program are provided.

Hawaii Agriculture Conference - this Thursday!!

Hawaii Agriculture Conference, Ag 2006, "Maximizing Your Bottom Line." October 26, 2006, Hilton Hawaiian Village. Online registration is available at [this link](#).

This month's grant winners!

By Doug Vincent

Special Program Director for Grants and Contracts

For the most part, grants and contracts pay for what we do outside of the classroom. True, we do rely upon formula funds, Hatch, McIntire-Stennis and Smith-Lever. But those amounts are limited. Grants and contracts finance research, training and outreach projects, outfit labs, purchase equipment, fund travel, hire graduate students, post-docs, and student helpers. CTAHR continues to do well with our grants intake this fiscal year. Thus far for FY2007 and through October 20, 2006, CTAHR has received 108 awards for \$16,015,719. That is a great start and it is over \$2.72 million ahead over the same period of the last fiscal year (FY2006, 100 awards, \$13,289,573). **But** before we get too proud of ourselves – the CTAHR Flood mitigation grant is \$2.77 million and the new Hawaii-Iraq grant is for \$1.24 million – **both of which weren't in last year's budget**. So we need to continue to work hard and seek additional support for our activities. But for those of you successful this year already, please accept the collective thanks from CTAHR, our congratulations, and may you keep up the good work. The listing of these and previous grants and contracts demonstrate that CTAHR faculty and staff, from all units, islands and ranks can and continue to be successful in obtaining grants and contracts. Keep it going!!

Anne Alvarez (PEPS)

Detection of *Ralstonia solanacearum* and Development of Cultural Practices to Reduce Establishment of Bacterial Wilt Disease in Hawaii.

DA-Cooperative State Research Service. \$66,884

James Brewbaker (TPSS)

Identification of Disease-Resistance QTLs in Maize using CTAHR's 125 Near-Isogenic Lines.

DA-Cooperative State Research Service. \$22,810

David A Christopher (MBBE)

Characterization and Cloning of Pathogen-inducible Genes and Promoters to Improve Resistance of Papaya to Fungal Disease.

DA-Cooperative State Research Service. \$85,721

Genetic Transformation of Sugarcane Chloroplasts to Improve Expression and Containment of Genes Encoding Human Vaccines.

DA-Cooperative State Research Service. \$87,721

Virginia Easton-Smith (TPSS)

Ecology and Management of Black Twig Borer on Coffee in Hawaii.

DA-Cooperative State Research Service. \$29,735

J Kenneth Grace (PEPS)

CTAHR Research Capacity in Invasive Plant Species and Weed Management.

DA-Cooperative State Research Service. \$119,739

Travis Idol (NREM)

Controlling Invasive Species Using Native Plant Agroforestry Systems.

DA-Cooperative State Research Service. \$30,194

Wayne Iwaoka (HNFAS)

Adding Value to Tropical and Sub-Tropical Botanicals: Identification and Evaluation of Bioactive polyphenolics in Ilex, Guava, Mamaki, and Noni Leaf.

DA-Cooperative State Research Service. \$32,890

Andrew Kawabata (TPSS)

Floral and Nursery Industry Strategic Plan Implementation. County of Hawaii. \$5,000

Adelheid R Kuehnle (TPSS)

Field Performance of Bioengineered Anthurium.

DA-Cooperative State Research Service. \$51,813

Qing Li (MBBE)

Investigation of Wet Tropical Forest Ecosystems in the Pacific Remote Islands Complex.

DOI-Fish & Wildlife. \$75,000

Wayne Nishijima (PEPS)

Molecular Characterization of Disease Resistance Loci to Phytophthora in *Carica papaya*.

DA-Cooperative State Research Service. \$86,964

Resistance of Papaya Cultivars to *Enterobacter cloacae*: Significance to Food Quality for Value-added Products.

DA-Cooperative State Research Service. \$83,817

Jeri Ooka (PEPS)

Survey for Pathogens of Quarantine Importance to Hawaii Corn Seed.

DA-Dept of Agriculture. \$34,870

Robert Paull (TPSS)

Development and Mapping of Microsatellite Markers for Papaya.

DA-Cooperative State Research Service. \$74,237

Coffee Genomics: Isolation and Characterization of Genes Involved in Organ Size.

DA-Cooperative State Research Service. \$76,533

Gernot Presting (MBBE)

Functional Genomics of Maize Centromeres.

Univ of Georgia. \$210,132

Genomic Barcoding of Phytopathogenic Bacteria Important to Hawaii Agriculture.

DA-Cooperative State Research Service. \$62,287

Daniel Rubinoff (PEPS)

Exploration, Genetic Characterization, and Host Range Testing of Parasitoids for Biocontrol of the Erythrina Gall Wasp, *Quadrastichus erythrinae* Kim.

DA-Cooperative State Research Service. \$98,962

Janice Uchida (PEPS)

Incidence and Evaluation of a New Rust Disease on Myrtaceae in Hawaii.

DLNR-Division of Forestry & Wildlife. \$52,000

Goro Uehara (TPSS)

Soil Management CRSP.

US Agency for International Development. \$2,677,000

Commercial Rice Production Pilot Project.

German Technical Cooperation (GTZ). \$15,132

Hector Valenzuela (TPSS)

Growth of Tropical Crops in Response to Organic Amendments and Indigenous Arbuscular *mycorrhizae*.

DA-Cooperative State Research Service. \$43,565

Douglas Vincent (Admin)

University of Hawaii CTAHR Flood Mitigation Grant.

DA-Cooperative State Research Service. \$2,779,920

Agriculture Diversification: Hawaii Tropical Specialty Fruit Research and Development - 2006.

DA-Cooperative State Research Service. \$204,252

Tropical and Subtropical Agricultural Research (TSTAR) for Hawaii: Management 2006.

DA-Cooperative State Research Service. \$228,796

Jinzeng Yang (HNFAS)

Development of DNA Markers for Pacific Threadfin Aquaculture.

Oceanic Institute-HPU. \$145,884

Sylvia Yuen (CoF)

Relating to the Evaluation of the UPLINK Program.

Hawaii-Dept of Human Services. \$159,469

Great grant opportunities

By Doug Vincent
Special Program Director for Grants and Contracts

Tides Foundation
Moloka'i Environmental Protection Fund
Deadline: Open
<http://www.tidesfoundation.org/grants-impact/the-molokai-environmental-protection-fund/index.html>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Managed Ecosystems
Letter of Intent Due: October 5, 2006
Proposal Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1104>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Plant Biology (A): Gene Expression and Genetic Diversity
Letter of Intent Due: October 5, 2006
Proposal Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1118>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants Program
Plant Biology (B): Environmental Stress
Letter of Intent Due: October 5, 2006
Proposal Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1117>

U.S. Environmental Protection Agency
Environmental Justice Small Grants Program
Deadline: October 23, 2006
<http://www.epa.gov/compliance/resources/publications/ej/grants/rfa-sg-grant-6-13-06.pdf>

Hawaii Department of Agriculture
Agricultural Research Program Grants
Deadline: October 23, 2006
http://www.ctahr.hawaii.edu/vincent/RFP_Announcement_for_Ag_Research_Programs_2007.pdf

Robert Wood Johnson Foundation
Scholars in Health Policy Research Program
Deadline: October 25, 2006
<http://www.rwjf.org/applications/solicited/cfp.jsp?ID=19666>

National Science Foundation
Partnerships for International Research and Education
Pre-proposals due: October 30, 2006
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf06589

National Oceanic and Atmospheric Administration
National Marine Fisheries Service
FY 2007 Community-based Marine Debris Prevention and Removal Project Grants
Deadline: October 30, 2006
<http://www.grants.gov/search/search.do?oppld=9890&mode=VIEW>

U.S. Department of Agriculture
CSREES
Animal Biosecurity Coordinated Agricultural Projects (CAP)
Deadline: October 31, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1522>

The National Academies
2006 Research Associateship Programs (multiple programs available)
Postdoctoral and Senior Awards
Deadline: November 1, 2006
<http://www7.nationalacademies.org/rap/>

U.S. Department of Agriculture
Western Regional Sustainable Agricultural Research and Education (SARE)
Professional Development Program
Deadline: November 1, 2006
http://wsare.usu.edu/grants/docs/req_pd_07.pdf

National Gardening Association
Home Depot
Youth Garden Grant Program
Deadline: November 1, 2006
<http://www.kidsgardening.com/grants.asp>

National Oceanic and Atmospheric Administration
National Estuarine Research Research Graduate Research Fellowship Program FY07
Deadline: November 1, 2006
<http://apply.grants.gov/opportunities/instructions/oppNOS-OCRM-2007-2000788-cfda11.420-cid2050001-instructions.pdf>

Foundation for Child Development
Young Scholars Program for Research on Immigrant
Children

Deadline: November 1, 2006

<http://www.fcd-us.org/ourwork/y-how.html>

U.S. Department of Education
Fulbright-Hays Group Projects Abroad Program

Deadline: November 2, 2006

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/E6-15487.pdf>

National Science Foundation
Biomaterials

Deadline: November 3, 2006

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13699

Fund for Wild Nature

Proposals accepted to save and restore native species and
wild ecosystems.

Deadline: November 3, 2006

<http://www.fundwildnature.org/proposal.html>

National Science Foundation
Minority Postdoctoral Research Fellowship and Supporting
Activities

Deadline: November 6, 2006

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf06586

U.S. Department of Education
Upward Bound Math and Science Program

Deadline: November 6, 2006

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/06-8102.pdf>

U.S. Department of Agriculture
CSREES
Iraq Agricultural Extension Revitalization Program

Deadline: November 8, 2006

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1620>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program

Bioactive Food Components for Optimal Health

Letter of Intent Due: November 8, 2006

Proposal Deadline: January 17, 2007

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1096>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program

Biobased Products and Bioenergy Production Research

Letter of Intent Due: November 8, 2006

Proposal Deadline: January 17, 2007

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1073>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program

Improving Food Quality and Value

Letter of Intent Due: November 8, 2006

Proposal Deadline: January 17, 2007

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1084>

Camille and Henry Dreyfus Foundation
Camille Dreyfus Teacher-Scholar Award for Chemical
Sciences

Deadline: November 9, 2006

<http://www.dreyfus.org/tc.shtml#introduction>

U.S. Department of Agriculture
U.S. Department of Energy
Plant Feedstock Genomics for Bioenergy

Pre-application Deadline: November 13, 2006

Proposal Deadline: January 30, 2007

[https://e-center.doe.gov/iips/faopor.nsf/UNID/29F5CC5829D678BC8525720300584853/\\$file/FOA_Notice_07-03.pdf](https://e-center.doe.gov/iips/faopor.nsf/UNID/29F5CC5829D678BC8525720300584853/$file/FOA_Notice_07-03.pdf)

National Oceanic and Atmospheric Administration
General Coral Reef Conservation

Deadline: November 10, 2006

<http://apply.grants.gov/opportunities/instructions/oppNMFS-HCPO-2007-2000782-cfda11.463-cid2049898-instructions.pdf>

National Oceanic and Atmospheric Administration
Coral Reef Ecosystems Studies (CRES)

Deadline: November 13, 2006

<http://apply.grants.gov/opportunities/instructions/oppNOS-NCCOS-2007-2000701-cfda11.478-cid2041972-instructions.pdf>

National Oceanic and Atmospheric Administration
NOAA Coral Reef Conservation Grant Program –
International Grant

Pre-application Deadline: November 13, 2006

http://ipo.nos.noaa.gov/coralgrantsdocs/IPO_07_Coral_FFO.pdf

National Oceanic and Atmospheric Administration
NOAA Coral Reef Conservation Grant Program – State and
Territorial Coral Reef Ecosystem Monitoring Grant

Pre-application Deadline: November 13, 2006

<http://www.grants.gov/search/search.do?oppld=9991&mode=VIEW>

Robert Wood Johnson Foundation
Substance Abuse Policy Research Program – Round XI

Deadline: November 14, 2006

<http://www.rwjf.org/applications/solicited/cfp.jsp?ID=19686>

Rutgers University
IR-4, Specialty Crops Pest Management Program
Biopesticide Research Grants
Deadline: November 14, 2006
[http://ir4.rutgers.edu/Biopesticides/
EarlyAdvDemoGuidelinesForms-2007.doc](http://ir4.rutgers.edu/Biopesticides/EarlyAdvDemoGuidelinesForms-2007.doc)

U.S. Department of Education
Fulbright-Hays Faculty Research Abroad Fellowship
Program
Deadline: November 15, 2006
[http://a257.g.akamaitech.net/7/257/2422/01jan20061800/
edocket.access.gpo.gov/2006/pdf/E6-15757.pdf](http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/E6-15757.pdf)

U.S. Department of Education
Fulbright-Hays Doctoral Dissertation Research Abroad
Program
Deadline: November 15, 2006
[http://a257.g.akamaitech.net/7/257/2422/01jan20061800/
edocket.access.gpo.gov/2006/pdf/E6-15758.pdf](http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/E6-15758.pdf)

U.S. Department of the Interior
U.S. Geological Survey
EDMAP – The Educational Component of the National
Cooperative Geologic Mapping Program
Deadline: November 16, 2006
[http://www.usgs.gov/contracts/EDMAP/2007EDMAPAnn.
doc](http://www.usgs.gov/contracts/EDMAP/2007EDMAPAnn.doc)

Ford Foundation
Predoctoral Fellowships for Achieving Excellence in
College and University Teaching
Deadline: November 16, 2006
[http://www7.nationalacademies.org/fordfellowships/
fordpredoc.html](http://www7.nationalacademies.org/fordfellowships/fordpredoc.html)

U.S. Environmental Protection Agency
Office of Solid Waste and Emergency Response Grants
Deadline: November 20, 2006
<http://www.epa.gov/oswer/docs/grants/06-08.pdf>

U.S. Environmental Protection Agency
Fall 2007 EPA Science to Achieve Results (STAR)
Fellowships for Graduate Environmental Study.
Pre-application Deadline: November 28, 2006
http://es.epa.gov/ncer/rfa/2007/2007_star_fellow.html

U.S. Environmental Protection Agency
Fall 2007 Greater Research Opportunities (GRO)
Fellowships for Graduate Environmental Study
Pre-Application Deadline: November 28, 2006
http://es.epa.gov/ncer/rfa/2007/2007_star_gro_grad.html

National Pork Board
Research Proposals
Deadline: November 28, 2006
<http://www.pork.org/Documents/RFPall.doc>

U.S. Environmental Protection Agency
Fall 2007 EPA Greater Research Opportunity (GRO)
Fellowships for Undergraduate Environmental Study
Pre-Application Deadline: November 29, 2006
[http://es.epa.gov/ncer/rfa/2007/2007_star_gro_undergrad.
html](http://es.epa.gov/ncer/rfa/2007/2007_star_gro_undergrad.html)

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Animal Reproduction
Deadline: November 29, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1070>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Animal Protection and Biosecurity
Deadline: November 29, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1069>

U.S. Environmental Protection Agency
Sources, Composition and Health Effects of Course
Particulate Matter
Deadline: November 30, 2006
http://es.epa.gov/ncer/rfa/2006/2006_star_coarse_pm.html

Ford Foundation
Postdoctoral Fellowships for Achieving Excellence in
College and University Teaching
Deadline: November 30, 2006
[http://www7.nationalacademies.org/fordfellowships/
fordpost.html](http://www7.nationalacademies.org/fordfellowships/fordpost.html)

Ford Foundation
Dissertation Fellowships for Achieving Excellence in
College and University Teaching
Deadline: November 30, 2006
[http://www7.nationalacademies.org/fordfellowships/
forddiss.html](http://www7.nationalacademies.org/fordfellowships/forddiss.html)

U.S. Department of Agriculture
CSREES
Assistive Technology Programs for Farmers with
Disabilities – National and Regional AgrAbility Project,
Smith-Lever 3B,3C, and 3D Program.
Deadline: December 1, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1061>

U.S. Environmental Protection Agency
Activities that Advance Methane Recovery and Use as a
Clean Energy Source
Deadline: December 4, 2006
<http://www.epa.gov/oar/grants/06-08.pdf>

U.S. Environmental Protection Agency
Research to Develop, Adapt or Compare Technologies to
Detect Live Viruses and other Enteric Pathogens in Large
Volumes of Water.
Deadline: December 5, 2006
<http://www.epa.gov/nerl/opportunities/RFA-EPA-ORD-06-26210.pdf>

U.S. Department of Agriculture
Western Regional Sustainable Agricultural Research and
Education (SARE)
Farmer Rancher Grants
Deadline: December 6, 2006
http://wsare.usu.edu/grants/docs/req_fr_07.pdf

U.S. Department of Agriculture
Western Regional Sustainable Agricultural Research and
Education (SARE)
Professional + Producer Grants
Deadline: December 6, 2006
http://wsare.usu.edu/grants/docs/req_pp_07.pdf

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
CSREES – National Integrated Food Safety Initiative
Minimizing Microbial Food Safety Hazards of Fresh and
Fresh-Cut Fruits and Vegetables
Letter of Intent Due: December 8, 2006
Proposal Deadline: January 12, 2007
http://www.csrees.usda.gov/funding/rfas/pdfs/07_food_safety.pdf

U.S. Department of Agriculture
CSREES – Regional Integrated Pest Management Western
Region
Deadline: December 11, 2006
http://www.csrees.usda.gov/funding/rfas/pdfs/07_ipm_western.pdf

National Science Foundation
East Asia and Pacific Summer Institutes for U.S. Graduate
Students
Deadline: December 12, 2006
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf06602

U.S. Environmental Protection Agency
Uncertainty Analyses of Models in Integrated
Environmental Assessments
Deadline: December 13, 2006
http://es.epa.gov/ncer/rfa/2006/2006_star_uncertainty.html

U.S. Department of Justice
Bureau of Justice Assistance
Gang Resistance Education and Training (G.R.E.A.T.)
Program
Deadline: December 14, 2006
<http://www.ojp.usdoj.gov/BJA/grant/07GREATsol.pdf>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Food Safety – Epidemiological Approaches
Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1088>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Food Safety
Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1087>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Managed Ecosystems
Letter of Intent Due: October 5, 2006
Proposal Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonom=1104>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Microbial Biology (B): Biology of Plant-Microbe
Associations
Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonom=1500>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Plant Biology (A): Gene Expression and Genetic Diversity
Letter of Intent Due: October 5, 2006
Proposal Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonom=1118>

U.S. Department of Agriculture
CSREES – National Research Initiative-Competitive Grants
Program
Plant Biology (B): Environmental Stress
Letter of Intent Due: October 5, 2006
Proposal Deadline: December 14, 2006
<http://www.csrees.usda.gov/fo/fundview.cfm?fonom=1117>

U.S. Environmental Protection Agency
Development of Environmental Health Outcome Indicators
Deadline: December 14, 2006
http://es.epa.gov/ncer/rfa/2006/2006_star_ephi.html

Organic Farming Research Foundation
Requests for Proposals
Deadline: December 15, 2006
<http://www.ofrf.org/research/application.html>

Centers for Disease Control and Prevention
Research for Preventing Violence and Violence-Related
Injury
Deadline: December 15, 2006
<http://www.cdc.gov/od/pgo/funding/CE07-010.htm>

U.S. Department of Agriculture
CSREES – Special Research Grants Program – Potato
Research
Deadline: December 20, 2006
http://www.csrees.usda.gov/funding/rfas/pdfs/07_potato.pdf

U.S. Environmental Protection Agency
4th Annual P3 Awards: A National Student Design
Competition for Sustainability Focusing on People,
Prosperity and Planet.
Deadline: December 21, 2006
http://es.epa.gov/ncer/rfa/2007/2007_p3_4thannual.html

U.S. Department of Agriculture
Rural Development Program – Solid Waste Management
Grant Program
Deadline: December 31, 2006
<http://www.usda.gov/rus/water/SWMG.htm>

U.S. Department of Agriculture
Rural Development Program – Technical Assistant and
Training Grant
Water and Waste Disposal
Deadline: December 31, 2006
<http://www.usda.gov/rus/water/tatg.htm>

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

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?fonom=1135>

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

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 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 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 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
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>

Faculty pubs on newsstands now . . .

Greg Bruland (NREM)

Lamsal, S., S. Grunwald, G.L. Bruland, C.M. Bliss, and N.B. Comerford. 2006. Regional hybrid geospatial modeling of soil nitrate-nitrogen in the Santa Fe River Watershed. *Geoderma* 135:233-247.

Loren Gautz (MBBE)

Loren D. Gautz, Pakieli Kaufusi, Mel C. Jackson, Harry C. Bittenbender, and Chung-Shih Tang. 2006. Determination of Kavalactones in Dried Kava (*Piper methysticum*) Powder Using Near-Infrared Reflectance Spectroscopy and Partial Least-Squares Regression. *J. Agric. Food Chem.*, 54 (17), 6147 -6152, 2006.

Russell Messing (PEPS)

Messing, R. H. & M. G. Wright. 2006. Biological control of invasive species: solution or pollution. *Frontiers in Ecology and the Environment* 4: 132-140.

Wang, X. G. & R. H. Messing. 2006. Feeding and attraction of non-target flies to spinosad-based fruit fly bait. *Pest Management Science* 62: 933-939.

Sime, K. R., K.M. Daane, R. H. Messing & M. W. Johnson. 2006. Comparison of two laboratory cultures of *Psytalia concolor* (Hymenoptera: Braconidae), as a parasitoid of the olive fruit fly. *Biological Control* 39: 248-255.

Messing, R. H., R. Footitt & K. Pike. 2006. New records of invasive aphids in Hawai'i. *Records of the Hawaii Biological Survey for 2004-2005. Bishop Museum Occasional Papers* 88: 26-29.

Sime, K.R., K. M. Daane, J. W. Andrews, K. Hoelmer, C. H. Pickett, H. Nadel, M. W. Johnson, R. H. Messing. 2006. The biology of *Bracon celer*, as a parasitoid of the olive fruit fly. *BioControl* 51: 553-567.

Scot Nelson (PEPS)

Nelson, Scot C. and Craig R. Elevitch. 2006. *Noni: The Complete Guide for Consumers and Growers*. Permanent Agricultural Resources, Holualoa, Hawaii. <http://www.nonithecompleteguide.com/>

Dan Paquin (MBBE)

Daniel G. Paquin, Wenhao H. Sun, Chung-Shih Tang, Qing X. Li. A phytoremediation study: Selection of tropical and other vascular plants for decolorization of Poly R-478 dye. 2006. *Remediation Journal*. 16:97-107.

Dan Rubinoff (PEPS)

Rubinoff, D. 2006. DNA Barcoding evolves into the Familiar. *Conservation Biology* 20:1548-1549.

Cameron, S., D. Rubinoff and K. Will. 2006. Who Will Actually Use DNA Barcoding and What Will it Cost? *Systematic Biology* 55: 844-847.

see you next month!