

**Department of Plant and Environmental Protection Sciences**  
College of Tropical Agriculture and Human Resources  
University of Hawaii at Manoa

**DESCRIPTION OF GRADUATE FACULTY INTERESTS**

Department Chair: Dr. J. Kenneth Grace

Tropical Plant Pathology Graduate Program Chair: Dr. Brent S. Sipes

Entomology Graduate Program Chair: Dr. Julian R. Yates III

Department Webpage: <http://www.ctahr.hawaii.edu/peps>

December 2008

## Dr. Alberto Bressan (Entomology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way Room 310

Honolulu, HI 96822, USA

Phone: 808-956-6741

Fax: 808-956-2428

Email: [bressan@hawaii.edu](mailto:bressan@hawaii.edu)

### Research Areas

- **Integrated Pest Management of insect vectors in agro-ecosystems.** Ecology and epidemiology of diseases caused by insect-vectored plant pathogens. Evolution and molecular interaction among insects and microorganisms (bacteria and viruses).

### Selected Recent Publication

- Galetto L., Nardi M., Saracco P., **Bressan A.**, Marzachi C., and Bosco D. Different titres of chrysanthemum yellows phytoplasma, “*Candidatus Phytoplasma asteris*”, may explain variation in vector competency of *Euscelidius variegates* Accepted to Entomologia Experimentalis et Applicata.
- Arneodo J.D., **Bressan A.**, Lherminier J., Michel J., and Boudon-Padieu E. 2008. Ultrastructural detection of an unusual intranuclear bacterium in *Pentastiridius leporinus* (Hemiptera: Cixiidae) Journal of Invertebrate Pathology, 97: 310-313.
- **Bressan A.**, Sémétey O., Nusillard B., Clair D., and Boudon-Padieu E. 2008. Insect Vectors (Hemiptera: Cixiidae) and pathogens associated with the disease syndrome “Basses richesses” of Sugar Beet in France. Plant Disease. 92: 113-119.
- Sémétey O., **Bressan A.**, Clair D., Boudon-Padieu E. 2007. Specific detection of the  $\gamma$ -3 Proteobacteria associated with the syndrome of “Basses richesses” in *Pentastiridius* sp. by using a Ribosomal Intergenic Spacer Analysis (RISA). Plant Pathology. 56: 797-804.
- **Bressan A.**, Turata R., Maixner M., Spiazzi S., Boudon-Padieu E., Girolami V., 2007. Vector activity of *Hyaletthes obsoletus* living on nettles and transmitting a Stolbur phytoplasma to grapevines. A case study. Annals of Applied Biology. 150: 331-339.
- Sémétey O., Gatineau F., **Bressan A.**, Boudon-Padieu E., 2007. Characterization of a  $\gamma$ -3 Proteobacteria responsible for the syndrome “basses richesses” of sugar beet transmitted by *Pentastiridius* sp. (Hemiptera, Cixiidae). Phytopathology. 97: 72-78.
- **Bressan A.**, Clair D., Sémétey O., Boudon-Padieu E., 2006. Insect injection and artificial feeding bioassays to test the vector specificity of Flavescence dorée phytoplasma. Phytopathology. 96: 790-796.
- **Bressan A.**, Larrue J., Boudon-Padieu E., 2006. Patterns of phytoplasma-infected and infective *Scaphoideus titanus* leafhoppers in vineyards with high incidence of Flavescence dorée. Entomologia Experimentalis et Applicata. 119: 61-69.
- **Bressan A.**, Purcell A.H., 2005. Effect of benzothiadiazole on the transmission of X-disease phytoplasma by the leafhopper vector *Colladonus montanus* to *Arabidopsis thaliana*, a new experimental host plant. Plant Disease. 89: 1121-1124.
- **Bressan A.**, Girolami V., Boudon-Padieu E., 2005. Reduced fitness of the leafhopper vector *Scaphoideus titanus* exposed to Flavescence dorée phytoplasma. Entomologia Experimentalis et Applicata. 115: 283-290.

## Dr. Anne Alvarez (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3190 Maile Way, St. John 315

Honolulu, HI 96822

Phone: 808-956-7764/8054

Fax: 808-956-2832

Email: [alvarez@hawaii.edu](mailto:alvarez@hawaii.edu)

Webpage: <http://www2.hawaii.edu/~alvarez/>

### Research Areas

- **Population diversity:** Genetic, serological, and biochemical studies are undertaken to identify virulent subpopulations of bacteria and to show phylogenetic relationships among strains in selected species of plant pathogenic bacteria.
- **Diagnostics:** Based on diversity of plant pathogens, our lab focuses on development and application of specific immunodiagnostic and DNA-based assays for detection and identification of pathogens distributed worldwide in seeds and plant propagative materials. We also work on development of biosensors and hand-held tracking systems for monitoring invasive species in mixed microbial populations.
- **Epidemiology:** The tracking devices are used to determine primary sources of inoculum for bacterial diseases of tropical crops. We are currently working on pathogenic strains of bacteria that cause bacterial canker of tomato, anthurium blight, ginger wilt, and pineapple heart rot.
- **Biological control:** A consortium of beneficial bacterial species has been developed that reduces the incidence and spread of anthurium blight. We are currently studying the effects of beneficial bacteria on disease, including their role in preventing the pathogen from colonizing foliar and vascular tissues. Host-pathogen interactions are studied using immunodiagnostic and DNA-based detection methods in plant tissues. A genetically modified bioluminescent strain of the anthurium blight pathogen is also used for determining effects of beneficial bacteria in preventing the infection process.

### Selected Recent Publications

- Kubota, R., Vine, B. G., **Alvarez, A.M.**, and Jenkins, D.M. 2008. Detection of *Ralstonia solanacearum* by Loop-mediated isothermal amplification method (LAMP). *Phytopathology*: 98:1045-1051.
- Kaneshiro, W.K., Burger, M., Vine, B., de Silva, A., and **Alvarez, A.M.** 2008. Characterization of *Erwinia chrysanthemi* from a bacterial heart rot of pineapple outbreak in Hawaii. *Plant Dis.* 92:1444-1450.
- Paret, M.L., de Silva, A.S., Criley, R.A., and **Alvarez, A.M.** 2008. *Ralstonia solanacearum* race 4: Risk assessment for edible ginger and floriculture ginger industries in Hawaii. *HortTech* 18 (1) 90-96.
- Jenkins, D.M., Chami, B., Kreuzer, M., Presting, G., **Alvarez A. M.** and Liaw, B.Y. 2006. Hybridization probe for femtomolar quantification of selected nucleic acid sequences on a disposable electrode. *Analytical Chemistry* 78(7): 2314-2318.
- Kaneshiro, W.S., Mizumoto, C.Y. and **Alvarez, A.M.** 2006. Differentiation of *Clavibacter michiganensis* subsp. *michiganensis* from seed-borne saprophytes using ELISA, Biolog and 16SrDNA sequencing. *Eur. J. Plant Pathol.* 116:45-56.
- **Alvarez, A.M.**, Kaneshiro, W.S. and Vine, B.G. 2005. Diversity of *Clavibacter michiganensis* subsp. *michiganensis* populations in tomato seed: what is the significance? *Acta Hort* 695: 205-213.
- **Alvarez, A.M.** 2004. Integrated approaches for detection of plant pathogenic bacteria and diagnosis of bacterial diseases. *Annu. Rev. Phytopathol* 42:339-366.

## Dr. Wayne B. Borth (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3190 Maile Way, St. John 310

Honolulu, HI 96822

Phone: (808) 956-7317

e-mail: borth@hawaii.edu

### Research Areas

- **Detection, characterization, and isolation of phytoplasmas and plant viruses** in Hawaii.
- **Identification and cloning of plant genes involved in the control of Systemic Acquired Resistance** of plants to viruses, fungi, and bacteria, and production of transgenic plants with constitutive expression of these genes.
- **Analysis of gene expression in transgenic plants challenged with pathogens** and development of screening assays to evaluate these plants for resistance to viral, bacterial, and fungal pathogens.

### Selected Recent Publications

- Mangwende, T., Wang, M-L., **Borth, W.**, Hu, J., Moore, P.H., Mirkov, T.E., and Albert, H.H. 2008. The P0 gene of Sugarcane yellow leaf virus encodes an RNA silencing suppressor with unique activities. *Virology* (accepted for publication).
- Melzer, M.J., Sether, D.M., Karasev, A.V., **Borth, W.**, and Hu, J.S. 2008. Complete nucleotide sequence and genome organization of Pineapple mealybug wilt-associated virus-1. *Arch. Virol.* 153:707-714.
- **Borth, W.B.**, Fukuda, S.K., Hamasaki, R.T., ,Hu, J.S., and Almeida, R.P.P. 2006. Detection, Characterization and Transmission by *Macrostelus* Leafhoppers of Watercress Yellows Phytoplasma in Hawaii. *Annals of Applied Biology.* 149: 357-363.
- Melzer, M.J., **Borth, W.B.**, Zee, F., Hilf, M.E., Garnsey, S.M., and Hu, J.S. 2006. Incidence, distribution, and diversity of Citrus tristeza virus in the Hawaiian islands. In: Proc. 16<sup>th</sup> Conf. IOCV. Pages 179-186.

## Dr. John J. Cho (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

Maui Agricultural Research Center

424 Mauna Place, Kula, HI 96790

Phone: 808-878-1213

Fax: 808-878-6804

Email: [choj@hawaii.edu](mailto:choj@hawaii.edu)

### Research Areas:

- Diseases of vegetable and root crops (lettuce, tomato, cucurbits, taro)
- Breeding for insect and disease resistant tomatoes and taro (*Colocasia esculenta*) using traditional cross pollination methods and molecular marker assisted selection.

### Selected Publications:

- A.M. Ortiz, S.C. Miyasaka, **J.J. Cho**, and B.S. Sipes. 2008. Resistance and tolerance to *Meloidogyne javanica* in *Colocasia esculenta* from Thailand, Vietnam, and Nepal. *International Journal of Nematology* 18:66-70.
- **J. J. Cho**, R. A. Yamakawa, and J. Hollyer. 2007. Hawaiian kalo, past and future. Univ. of Hawaii at Manoa, College of Tropical Agriculture and Human Resources. CES Sustainable Agriculture SA-1, 8pp.
- **Cho, J. J.** 2003. Breeding Hawaiian taros for the future. Third International Taro Symposium. Nadi, Fiji. <http://www.spc.org.nc/cis/tarosym/TaroSym%20CD/Papers/BreedingHawaiianTaros-JohnCho.pdf>.
- Irwin, S.V.; Kaufusi, P.; de la Pena, R.; **Cho, J.J.** 1998. Molecular characterization of taro (*Colocasia esculenta*) using RAPD markers. *Euphytica* 99: 183-189.
- Kumar, N.K.; Ullman, D.E.; **Cho, J.J.** 1995. *Frankliniella occidentalis* (Thysanoptera: Thripidae) landing and resistance to tomato spotted wilt tospovirus among *Lycopersicon* accessions with additional comments on *Thrips tabaci* (Thysanoptera: Thripidae) and *Trialeurodes vaporariorum* (Homoptera: Aleyrodidae). *Environmental Entomology* 24: 513-520.
- Bautista, R.C.; Mau, R.F.L.; **Cho, J.J.**; Custer, D.M. 1995. Potential of tomato spotted wilt tospovirus plant hosts in Hawaii as virus reservoirs for transmission by *Frankliniella occidentalis* (Thysanoptera: Thripidae). *Phytopathology* 85: 953-958.
- Ullman, D.E.; **Cho, J.J.**; Mau, R.F.L.; Hunter, W.B.; Westcot, D.M.; Custer, D.M. 1992. Thrips-tomato spotted wilt virus interactions: Morphological, behavioral and cellular components influencing thrips transmission. *Advances in Disease Vector Research* 9: 195-240.
- **Cho, J.J.**; Mau, R.F.L.; German, T.L.; Harmann, R.W.; Yudin, L.S.; Gonsalves, D.; Provvidenti, R. 1989. A multidisciplinary approach to management of tomato spotted wilt virus in Hawaii. *Plant Disease* 73: 375-383

## Dr. Yangrae Cho (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3190 Maile Way, St. John 317, Honolulu, HI 96822

Phone: 808-956-5305

email: [yangrae@hawaii.edu](mailto:yangrae@hawaii.edu)

### Research Areas

- **Spore production and pathogenicity.** Asexual spore production is of fundamental importance to fungal dispersal and survival. Our research focus is in the molecular bases of fungal asexual spore production and pathogenicity. We have been characterizing the functions of two transcription factor genes using genetics and genomics approaches.
- **Population structures of *Mycosphaerella* at Hawaii.** *M. fijiensis* population structures suggest the presence of multiple strains and movement of these strains within and among the Hawaiian Islands. We have been investigating the extent of pathogen movement; pathogen complexity at the lesion, plant, farm, and island level; emergence of new strains in Hawaii; and the sensitivity of each strain to available fungicides.
- **Systematic KO of transcription factor genes:** We have developed methods for targeted gene knockout (KO) and knocked out over 100 genes during last two years. For detailed biological studies, we have been using genetics, molecular evolution, functional genomics, and bioinformatics approaches.
- **Biotechnology:** We are pursuing the production of industrial proteins and secondary metabolites using some of selected fungi for commercialization. We plan to use whole genome sequencing, comparative genomics, and bioinformatics for data handling.

### Selected Recent Publications

- **Cho Y**, Kim K-H, La Rota M, Scott D, Santopietro G, Callihan M and Lawrence C. 2008. Identification of Novel Virulence Factors Associated with Signal Transduction Pathways in *Alternaria brassicicola*. Mol. Microbiol. **Accepted**.
- Sanchez-Puerta MV, **Cho Y**, Mower JP, Alverson AJ, Gummow J and Palmer JD. 2008. Horizontal transfer of *cox1* group I intron among flowering plants: assessing the variation in the coconversion tract. Mol. Biol. Evol. 25(8): 1762-1777.
- **Cho Y**, Hou S, and Zhong S. 2008. Analysis of expressed sequence tags from the fungal banana pathogen *Mycosphaerella fijiensis*. The Open Mycology J. The Open mycology J. 2: 61-73.
- Lawrence CB, Mitchell TK, Craven KD, **Cho Y**, Cramer RA, Kim, KH. 2008. Mini review: At Death's Door: *Alternaria* Pathogenicity Mechanisms. Plant Pathology J. 24:101-111.
- Craven KD, Velez H, **Cho Y**, Hicks R, Lawrence CB, and Mitchell TK. 2008. Anastomosis is required for virulence of the fungal necrotroph, *Alternaria brassicicola*. Eukaryotic Cell. Eukaryotic Cell 7:675-683.
- Kim K-H, **Cho Y**, La Rota M, Cramer R and Lawrence CB. 2007 Functional analysis of the *Alternaria brassicicola* non-ribosomal peptide synthetase gene AbNPS2 reveals a role in conidial cell wall construction. Molecular Plant Pathology 8:23-39.
- **Cho Y**, Cramer RA, Kim K-H, Michelle T, Figuli B, Pryor BM and Lawrence CB. 2007. The *Fus3/Kss1* MAP kinase homolog *Amk1* regulates the expression of several hydrolytic enzyme genes in *Alternaria brassicicola*. Fungal Genetics and Biology 44:543-553.
- **Cho Y**, Davis J, Kim K-H, Wang J, Sun Q-H, Cramer RA and Lawrence CB. 2006. A High Throughput Targeted Gene Disruption Method for *Alternaria brassicicola* Functional Genomics Using Linear Minimal Element (LME) Constructs. Mol. Plant-Microbe Interact. 19:7-15.

**Dr. Stephen A. Ferreira (Tropical Plant Pathology)**

**Department of Plant and Environmental Protection Sciences**

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way, Room 310

Honolulu, HI 96822

Phone: 808-956-7834

Fax: 808-956-2832

Email: [stephenf@hawaii.edu](mailto:stephenf@hawaii.edu)

**Research Areas:**

- Developing environmentally-friendly solutions to important plant diseases of selected Hawaiian crops
- Transgenic resistance in plants, using the papaya/PRSV system as a model

**Selected Publications:**

- **Ferreira SA**, KY Pitz, R Manshardt, F Zee, M Fitch and D Gonsalves. 2002. Virus coat protein transgenic papaya provides practical control of *Papaya ringspot virus* in Hawaii. *Plant Disease* 86:101-105.
- Fitch MMM, T Leong, L Akashi, **S Ferreira**, and P Moore. 2002. Papaya ringspot virus resistance genes as a stimulus for developing new cultivars and new production systems. *Horticulturae Acta*. 576:85-91.
- Zhu YJ, **S Ferreira**, M Fitch, and P Moore. 2002. Benzothiadiazole (BTH) activates systemic acquired resistance (SAR) responses in papaya to reduce disease symptoms of seedlings inoculated with *Phytophthora palmivora*. *Horticulturae Acta* 575:475-481.
- Fitch MMM, PH Moore, TCW Leong, LY Akashi, AKF Yeh, SA White, AS dela Cruz, L. Santo, and **SA Ferreira**. 2005. Clonally propagated and seed-derived papaya orchards: I. plant production and field growth. *Hort Science* 40(5):1283-1290.
- Guan, P, W Borth, **S Ferreira**, M-L Wang, J Hu, P. Moore and H. Albert. 2007. Annotated Sequence Record: Complete genome sequence of a new Hawaii isolate of Papaya ringspot virus. NCBI GeneBank.
- Tripathi, S, J Suzuki, **SA Ferreira**, and D Gonsalves. 2008. Pathogen profile of *Papaya ringspot virus*: characteristics, pathogenicity, sequence variability and control. *Molecular Plant Pathology*, in press.

## Dr. J. Kenneth Grace (Entomology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way, Room 310

Honolulu, Hawaii 96822-2271

Phone: 808-956-6737

Fax: 808-956-2428

Email: [kennethg@hawaii.edu](mailto:kennethg@hawaii.edu)

Webpages:

Termite Project: <http://www2.hawaii.edu/~entomol>

Personal Page: [http://www.ctahr.hawaii.edu/peps/people/fac/profile\\_grace.htm](http://www.ctahr.hawaii.edu/peps/people/fac/profile_grace.htm)

### Research Areas

- **Biology, behavior, ecology, and control of termites and ants**

### Selected Recent Publications

- Campora, C. E. and **J. K. Grace**. In Press. Comparison of tunneling in the laboratory and field by the Formosan subterranean termite, *Coptotermes formosanus* (Isoptera: Rhinotermitidae). *Sociobiology*.
- Gentz, M. C., **J. K. Grace** and M. E. Mankowski. 2008. Horizontal transfer of boron by the Formosan subterranean termite (*Coptotermes formosanus* Shiraki) after feeding on treated wood. *Holzforschung*.
- Gentz, M. C., and **J. K. Grace**. 2008. Native boron levels and the effect of boron treatment on *Coptotermes formosanus* Shiraki (Isoptera: Rhinotermitidae), *Coptotermes acinaciformis* (Froggatt) (Isoptera: Rhinotermitidae), and *Mastotermes darwiniensis* Froggatt (Isoptera: Mastotermitidae). *Journal of Entomological Science* 43: 217-224.
- Woodrow, R.J., T.G. Shelton, R.J. Oshiro, **J.K. Grace** and T.L. Wagner. 2008. Effects of disturbance-induced trauma on foraging by subterranean termites (Isoptera: Rhinotermitidae). *Sociobiology* 52: 107-118.
- **Grace, J. K.**, J. R. Yates III, M. Aihara-Sasaki, G. Lillich. 2007. Community education for better termite control in Hawaii. *Proceedings of the Hawaiian Entomological Society* 39: 139-142.
- Kirschenbaum, R. and **J. K. Grace**. 2007. Agonistic interactions of four ant species occurring in Hawaii with *Coptotermes formosanus* (Isoptera: Rhinotermitidae). *Sociobiology* 50: 643-651.
- Campora, C. and **J. K. Grace**. 2007. Behavioral response of the Formosan subterranean termite to borate treated wood. *Proceedings of the Hawaiian Entomological Society* 39: 127-137.
- Woodrow, R.J., **J.K. Grace**, and R.J. Oshiro. 2006. Comparison of localized injections of spinosad and selected insecticides for the control of *Cryptotermes brevis* (Isoptera: Kalotermitidae) in naturally infested structural mesocosms. *J. Economic Entomology* 99: 1354-1362.
- 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.
- **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: 503-509.

## Dr. Arnold H. Hara (Entomology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

Beaumont Agricultural Research Center

Physical Address: 920 Stainback Hwy Hilo, HI 96720

Mailing Address: 875 Komohana St. Hilo, HI 96720

Ph: (808) 981-8263 Fax: (808) 981-4518

e-mail: [arnold@hawaii.edu](mailto:arnold@hawaii.edu)

website: <http://www.ctahr.hawaii.edu/haraa/index.asp>

### Research Areas

- **Insect and mite pests of agricultural and floricultural crops** - elucidating the bionomics of these pests, and developing pest management programs that minimize the use of chemical pesticides. Dr Hara innovates preharvest and postharvest control treatments in a systems approach to quarantine security for floricultural crops to meet stringent interisland, interstate and foreign quarantine regulations. Some of his research accomplishments include the development of heat treatments to control quarantine pests, including the invasive coqui frog.

### Selected Recent Publications

- **Xu, T., C. Jacobsen, A. Hara, J. Li and Q. Li.** 2008. Efficacy of systemic insecticides on the gall wasp *Quadrastichus erythrinae* in wiliwili trees *Erythrina spp.* Pest Manage. Sci. (In press).
- **Marr, S.R, W.J. Mautz and A.H. Hara.** 2008. Parasite loss and introduced species: a comparison of the parasites of the Puerto Rican tree frog, (*Eleutherodactylus coqui*), in its native and introduced ranges. Biol. Invasions 10: 1289-1298.
- **Conant, P., C.K. Hirayama, C.M. Kishimoto and A.H. Hara.** 2006. *Trichogramma papilionis* (Nagarkatti), the first recorded *Trichogramma* species to parasitize eggs in the family Limacodidae. Proc. Hawaiian Entomol. Soc. 38: 133-135.
- **Xu, T., C. Jacobsen, A. Hara and Q. Li.** 2006. Application of an enzyme-linked immunosorbent assay for the analysis of imidacloprid in wiliwili tree, *Erythrina sandwichensis* O. Deg, for control of the wasp *Quadrastichus erythrinae*. J. Agric. Food Chem. 54: 8444-8449.
- **Woolbright, L.L., A.H. Hara, C.M. Jacobsen, W.J. Mautz and F.L. Benevides.** 2006. Population densities of the coqui, *Eleutherodactylus coqui* (Anura: Leptodactylidae) in newly invaded Hawaii and in native Puerto Rico. J. Herpetol. 40: 122-126.
- **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.
- **Arcinas, A. B.S. Sipes, A.H. Hara, and M.M.C. Tsang.** 2005. Effect of conditioning treatments on the survival of *Radopholus similis* at high temperatures. Journal of Nematology 37:250-253.
- **Tsang, M.M.C., A.H. Hara & B.S. Sipes.** 2004. Efficacy of hot water drenches of *Anthurium andraenum* plants against the burrowing nematode, *Radopholus similis*, and plant thermotolerances. Ann. Appl. Biol. 125: 309-316.
- **Arcinas, A.C., B.S. Sipes, A.H. Hara, & M.M.C. Tsang.** 2004. Hot water drench treatments for the control of *Radopholus similis* in rhaps and fishtail palms. HortScience 39:578-579.
- **Jacobsen, C. M. & A. H. Hara.** 2003. Irradiation of *Maconellicoccus hirsutus* (Homoptera: Pseudococcidae), for phytosanitation of agricultural commodities. J. Econ. Entomol. 96: 1334-1339.
- **Tsang, M.C., A. H. Hara & B. S. Sipes.** 2003. Hot-water treatments of potted palms to control burrowing nematode, *Radopholus similis*. Crop Protection 22: 589-593.

## Dr. John Hu (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3190 Maile Way, St. John 310

Honolulu, HI 96822

Phone: 808-956-7281

Fax: 808-956-2832

Email: [johnhu@hawaii.edu](mailto:johnhu@hawaii.edu)

### Research Areas

- **Banana bunchy top virus** (BBTV) is the most devastating virus disease of bananas. The virus is transmitted by the banana aphid (*Pentalonia nigronervosa*) in a persistent manner. New growth from infected plants is stunted and distorted, resulting in a characteristic "bunchy top" appearance. No fruit is produced on infected plants, and a high incidence of BBTV in production areas can cause complete yield loss. Specific objectives of this project are: (1) to develop rapid, sensitive, and reliable assays for detection of BBTV in plants and insects; (2) to characterize the genome organization and vector transmission of BBTV; and (3) to develop resistant transgenic banana plants to control BBTV.
- **Mealybug wilt of pineapple** (MWP) is a devastating disease found in all the pineapple-growing regions of the world. The disease is characterized by severe leaf tip dieback, downward curling of the leaf margins, and reddening and wilting of the leaves that can lead to total collapse of the plant. Specific objectives of this project include: (1) to develop rapid detection assays for the closterovirus; (2) to study the cause (etiology) of MWP; (3) to examine the epidemiology of the virus; and (4) to develop alternative, environmentally sound strategies to manage MWP.
- **Citrus tristeza virus** (CTV) is a major factor limiting citrus production throughout the world. In many citrus-growing regions, CTV has been responsible for the loss of millions of mature trees at a cost of billions of dollars. CTV is transmitted most efficiently by the brown citrus aphid (BrCA). Specific objectives of this project include: (1) to study the incidence and distribution of CTV strains in Hawaii; (2) to select potential candidate CTV strains for use in cross-protection; (3) to produce CTV-resistant citrus trees using pathogen-derived resistance approaches.

### Selected Recent Publications

- Tichaona Mangwende, T., Wang, M.-L., Borth, W., **Hu, J.S.**, Moore, P. H., Mirkov, T. E., Albert, H. H. (2008) The P0 gene of *Sugarcane yellow leaf virus* encodes an RNA silencing suppressor with novel activities. *Virology* (*in press*)
- Jiang, B., Hong, N., Wang, G.P., **Hu, J.S.**, Zhang, J.K., Wang, C.X., Liu, Y., Fan, X.D. 2008. Characterization of Citrus tristeza virus strains from southern China based on analysis of restriction patterns and sequences of their coat protein genes. *Virus Genes* 37:185-192.
- Kamo, K., Jordan, R.L., Hsu, H-T., and **Hu, J.S.** 2008. Antibodies in plants. *Floriculture, Ornamental and Plant Biotechnology*. 5:311-318.
- Melzer, M.J., Sether, D.M., Karasev, A.V., Borth, W., and **Hu, J.S.** 2008. Complete nucleotide sequence and genome organization of Pineapple mealybug wilt-associated virus-1. *Arch. Virol.* 153:707-714.
- Sether, D. M., Melzer, M.J., Borth, W.B., and **Hu, J.S.** 2008. Genome organization and phylogenetic relationship of Pineapple mealybug wilt associated virus-3 with other family *Closteroviridae* members. *Virus Genes* (*in press*)

## Dr. Ronald F. L. Mau (Entomology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way, Room 310

Honolulu, Hawaii 96822-2271

Phone: 808-956-7063

Fax: 808-956-2428

Email: [maur@ctahr.hawaii.edu](mailto:maur@ctahr.hawaii.edu)

Webpages:

Fruit Fly Project: <http://www.fruitfly.hawaii.edu>

### Research Areas

- **Insect pest management in vegetable crops; management of tephritid fruit fly pests; insecticide resistance management of pests**

### Selected Recent Publications

- Vargas R.I., **R.F.L. Mau**, E. B. Jang, R.M. Faust and L. Wong. 2008. The Hawaii fruit fly areawide pest management programme. *In* O. Koul, G.W. Cuperus, and N. C. Elliott (Eds.), Areawide Pest Management: Theory and Implementation. CAB International. 300-325.
- **Mau, R.F.L.**, E.B. Jang and R.I. Vargas. 2007. The Hawaii Area-Wide Fruit Fly Pest Management Programme: Influence of Partnership and a Good Education Programme, *In* Vreysen, M.J.B., A.S. Robinson, and J. Hendrichs (Eds.), Area-Wide Control of Insect Pests: From Research to Field Implementation. Springer, Dordrecht, The Netherlands.
- Vargas, R. I., **R. F. L. Mau**, and E. B. Jang. 2007. The Hawaii area-wide pest management program: Accomplishments and future directions. *Proc. Hawaii. Entomol. Soc.* 39: 99-104.
- McInnis, D., L. Leblanc, and **R. Mau**. 2007. Development and field release of a genetic sexing strain of the melon fly, *Bactrocera cucurbitae*. *Hawaii. Proc. Haw. Entomol. Soc.* 39: 105-110.
- Jang, E. B., **R. F. L. Mau**, R. I. Vargas, and D. O. McInnis. 2006. Exporting fruit from low fruit fly prevalence zones with a multiple mitigation systems approach. *In* *Proc. Intern. Symp. on Area-Wide Management of Insect Pests, Okinawa, Japan (Oct. 8-11, 2006)*.
- **Mau, R.F.L.**, J.S. Sugano, E.B. Jang, R.I. Vargas, and L. Wong. 2006. Public and private partnerships in area-wide fruit fly pest management for the benefit of farmers: The Hawaii experience. *In* *Proc. Intern. Symp. on Area-Wide Management of Insect Pests, Okinawa, Japan (Oct. 8-11, 2006)*.
- Vargas, R.I., **R.F.L. Mau**, L. Wong, and E. B. Jang. 2006. Successful utilization of the area-wide approach for the management of fruit flies in Hawaii. *In* *Proc. Intern. Symp. on Area-Wide Management of Insect Pests, Okinawa, Japan (Oct. 8-11, 2006)*.
- Barry, J.D., N.W. Miller, J.C. Pinero, A. Tuttle, **R.F.L. Mau**, R. I. Vargas. 2006. Effectiveness of protein baits on melon fly and oriental fruit fly (Diptera: Tephritidae): Attraction, feeding, and foraging. *J. Econ. Entomol.* 99(4): 1161-1167
- Zhao, J.-Z., H. L. Collins, Y.-X. Li, **R. F. L. Mau**, G. D. Thompson, M. Hertlein, J. T. Andaloro, R. Boykin, and A. M. Shelton. 2006. Monitoring diamondback moth (Lepidoptera: Plutellidae) resistance to spinosad, indoxacarb and emamectin benzoate. *J. Econ. Entomol.* 99(1): 176-181.

## Dr. Russell H. Messing (Entomology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

Kauai Agricultural Research Center

7370 Kuamoo Rd, Kapaa HI 96746

Phone: 808-822-4984 x223

Fax: 808-822-2190

Email: [messing@hawaii.edu](mailto:messing@hawaii.edu)

Webpage: <http://www2.hawaii.edu/~messing>

### Research Areas

- **Biological Control of invasive pest species; Integrated Pest Management** - Using detailed studies of parasitoid behavioral ecology, population dynamics, and life history parameters we try to identify aspects of natural enemy/ host interactions that will maximize efficacy against target pests while having minimal impact against non-target organisms. We carry out the nuts and bolts of classical biocontrol projects: including determination of appropriate target organisms, foreign exploration, quarantine testing, field release and evaluation.

### Selected Recent Publications

- **Messing, R. H.** & X. G. Wang. 2008. Competitor-free space mediates non-target impact of an introduced biological control agent. *Ecological Entomology*, *in press*.
- Wang, X. G & **R. H. Messing**. 2008. Role of egg-Laying experience in avoidance of superparasitism by the fruit fly parasitoid *Fopius arisanus* (Hymenoptera: Braconidae). *Ann. Entomol. Soc. Am.* 101: 656-663.
- Bokonon-Ganta, A. H., M. Ramadan & **R. H. Messing**. 2007. Reproductive biology of *Fopius ceratitivorus* (Hymenoptera: Braconidae), an egg-larval parasitoid of the Mediterranean fruit fly, *Ceratitidis capitata* (Diptera: Tephritidae). *Biological Control* 41: 361-367.
- **Messing, R. H.** M. N. Tremblay Mondor, E. B., Foottit R. G. & Pike K. S. 2007. Invasive aphids attack native Hawaiian plants. *Biological Invasions* 9: 601-607.
- **Messing, R. H.** & M. G. Wright. 2006. Biological control of invasive species: solution or pollution? *Frontiers in Ecology and the Environment* 4: 132-140.
- Mondor, E. B., M. N. Tremblay & **R. H. Messing**. 2007. Morphological and ecological traits promoting aphid colonization of the Hawaiian Islands. *Biological Invasions* 9: 87-100.
- **Messing, R. H.** Alien invaders in Hawaii: Prospects for remediation using biological control. *Proceedings of the Hawaiian Entomological Society* 39: 1-4.
- **Messing, R. H.**, R. Foottit & K. Pike. 2006. New records of invasive aphids in Hawai'i. *Records of Hawaii Biological Survey 2004-2005. Bishop Museum Occasional Papers* 88: 26-29.
- Wang, X. G., E. A. Jarjees, B. K. McGraw, A. H. Bokonon-Ganta, **R. H. Messing** & M. W. Johnson. 2005. Effects of spinosad-based fruit fly bait GF-120 on tephritid fruit fly and aphid parasitoids. *Biological Control* 35: 155-162.

## Dr. Scot C. Nelson (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources

875 Komohana St., Hilo, HI, 96720 U.S.A.

Phone: 808-981-5199

Email: [snelson@hawaii.edu](mailto:snelson@hawaii.edu)

### Current Research Project Areas:

- **Mycology and plant disease management:** Soilborne disease management for *Acacia koa* by grafting for control of koa wilt disease, caused by *Fusarium oxysporum* f. sp. *koa*.
- **Pathogen biology:** Studies on *Phytophthora morindae*, a new species of *Phytophthora* causing foliar blight of *Morinda citrifolia* (noni): characterizing aspects of this new pathogen's biology, ecology and pathology.
- **Pathogen populations:** Assessing population structure and fungicide resistance of *Mycosphaerella fijiensis* in Hawaii.
- **Volcanic Emissions:** Mitigating effects of sulfur dioxide and acid rain on floricultural crops.

### Selected Recent Publications:

- Nelson, S. C. 2008. *Abutilon* mosaic. UH-CTAHR, CES, PD-39.
- Nelson, S. C. 2008. *Lightning injury to plants*. UH-CTAHR, CES, PD-40.
- Nelson, S. C. 2008. *Cercospora* leaf spot and berry blight of coffee. UH-CTAHR, CES, PD-41.
- Nelson, S. C. 2008. *Cassytha filiformis*. UH-CTAHR, CES, PD-42.
- Nelson, S. C. 2008. *Cephaleuros* species, the plant-parasitic green algae. UH-CTAHR, CES, PD-43.
- Nelson, S. C. 2008. *Dasheen* mosaic of edible and ornamental aroids. UH-CTAHR, CES, PD-44.
- Nelson, S. C. 2008. *Late blight of tomato (Phytophthora infestans)*. UH-CTAHR, CES, PD-45.
- Nelson, S. C. 2008. *Mango powdery mildew*. UH-CTAHR, CES, PD-46.
- Nelson, S. C. 2008. *Mango anthracnose (Colletotrichum gloeosporioides)*. UH-CTAHR, CES, PD-48.
- Nelson, S. C., and Sewake, K. 2008. *Volcanic emissions injury to plant foliage*. UH-CTAHR, CES, PD-47.
- Ploetz, R. C., Kepler, A. K., Daniells, J., and Nelson, S. C. 2006. *Banana and plantain – an overview with an emphasis on Pacific island cultivars [Musacea (banana family)]*. In: *Species Profiles for Pacific Island Agroforestry*, C. Elevitch ed., Permanent Agriculture Resources, Holualoa, HI. 27 pp..
- Nelson, S. C. 2007. *Morinda citrifolia*. In: Janick, J., Paull, R. E. (eds) *Encyclopedia of Fruits and Nuts*. CABI United Kingdom.
- Ooka, Jeri J., Konanui, J., Henderson, J., Johnston, E., Nelson, S., and Osborn, T. 2006. *`Awa Production Guide*. Pp. 66-78 in: Johnston, E. and Rogers, H. (eds.) *Hawaiian `Awa: Views of an Ethobotanical Treasure*. Association for Hawaiian `Awa, Hilo, Hawaii.
- Nelson, S. C. 2006. *Integrated Pest Management for `Awa (Kava, Piper methysticum)*. Pp 79-90 in: Johnston, E. and Rogers, H. (eds.) *Hawaiian `Awa: Views of an Ethobotanical Treasure*. Association for Hawaiian `Awa, Hilo, Hawaii.
- Nelson, S. C. 2006. *Morinda citrifolia* (noni). Pp. 513-530 in: Elevitch, C. R. (ed.) *Traditional Trees of Pacific Islands: Their Culture, Environment, and Use*. Permanent Agriculture Resources, Holualoa, HI.
- Nelson, S. C., Ploetz, R. C., and Kelper, A. K. 2006. *Musa* species (banana and plantain). Pp. 521-562 in: Elevitch, C. R. (ed.) *Traditional Trees of Pacific Islands: Their Culture, Environment, and Use*. Permanent Agriculture Resources, Holualoa, Hawaii.
- Nelson, S. C., 2006. *Grafting of Acacia koa Gray onto young seedlings*. *Native Plants Journal* 7(2):137-140.

## Dr. Jeri J. Ooka (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

Kauai Agricultural Research Center

7370 Kuamoo Rd., Kapaa, HI 96746

Phone: 808-822-4984 x226

Fax: 808-822-2190

Email: [jeri@hawaii.edu](mailto:jeri@hawaii.edu)

### Research Areas:

- Diseases of field crops (maize, soybean, sunflower)
- Diseases of Polynesian introduced plants (taro, 'awa, coconut, kou, milo) and endemic Hawaiian plants (olona, loulou)
- Disease suppressive compost production
- Biocontrol of invasive and weed species (kahili ginger)

### Selected Publications:

- Chapin, M.H., and **Ooka, J.** 2003. *Prichardia pacifica* crown droop. Palm 47(2): 107-109.
- Khan, J., **Ooka, J. J.**, Miller, S. A., Madden, L. V. and Hoitink, H. A. J. 2004. Systemic resistance induced by *Trichoderma hamatum* 382 in cucumber against Phytophthora crown rot and leaf blight. Plant Dis. 88: 280-286.
- **Ooka, J.J.** 1994. Taro Diseases: a guide for field identification. HITAHR Res. Ext. Series. No. 148. CTAHR Publication. University of Hawaii. Honolulu, HI.
- **Ooka, J.J.** 2001. Shot Hole Disease of 'Awa (*Piper methysticum*) in Hawai'i. Phytopathology 91(6 Supplement): S68.
- **Ooka, J. J.**, Konanui, J., Henderson, J., Johnston, E., Nelson, S., and Osborn, T. 2006. 'Awa Production Guide. Pp 66-78. In: E. Johnston and H. Rogers (eds.). 2006. Hawaiian 'Awa – views of an ethnobotanical treasure. Association for Hawaiian 'Awa. Hilo, HI. 94pp.
- **Ooka, J.J.** , Lockhart, B.E.L., Lommel, S.A., Lane, L.C., Wysong, D.S., and Doupnik, B. 1991. Corn lethal necrosis in Hawaii. Phytopathology 80: 1022.
- Uchida, J., **Ooka, J.** 1993. Fungal rot killing coconut trees in Hawaii. Horticulture digest (USA) (no. 99) p. 1-4.

**Dr. Daniel Rubinoff (Entomology)****Department of Plant and Environmental Protection Sciences**

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way Room 310

Honolulu, HI 96822, USA

Phone: 808-956-8432

Fax: 808-956-2428

Email: [rubinoff@hawaii.edu](mailto:rubinoff@hawaii.edu)Webpage: <http://www.ctahr.hawaii.edu/rubinoffd/>**Research Areas**

- **Invasive Species** : Using DNA sequence data and ecological studies to understand the distribution and impact of invasive species in Hawaii e.g. revealing pathways by which invasive species invade.
- **Insect Systematics**: Using molecular and morphological data to establish relationships between known and new species with specific reference to endemic Hawaiian species and problematic invasive species.
- **Conservation Biology**: Using field and lab work to understand the causes for native insect and plant decline and developing synthetic research products which will allow more effective land management and native insect and plant conservation.
- 

**Selected Recent Publications**

- King, C and **D. Rubinoff**. 2008. First record of fossorial behavior in Hawaiian leafroller moth larvae, *Omiodes continuatalis* (Lepidoptera: Crambidae). *Pacific Science* **62**:147-150.
- Schmitz, P. and **D. Rubinoff**. 2008. Three new species of *Hyposmocoma* (Lepidoptera, Cosmopterigidae) from the Hawaiian Islands, USA based on morphological and molecular evidence. *Zootaxa*.**1821**: 49-58.
- Snyder, J. F., Warren, A. D., **Rubinoff, D.** and G. T. Austin. 2008. *Zizina otis* (F. 1787) Becomes Established on Oahu, Hawaii (Lepidoptera: Lycaenidae: Polyommatainae). *News of the Lepidopterist's Society* **50**. pp.3-6. COVER FEATURE
- **Rubinoff, D.** 2008. Phylogeography and ecology of an endemic radiation of Hawaiian aquatic case-bearing moths (*Hyposmocoma*: Cosmopterigidae). *Philosophical Transactions of the Royal Society of London B* **363**: 3459-3465.
- Haines, W. M. Heddle, P. Welton and **D. Rubinoff**. In press. A recent outbreak of the Hawaiian koa moth, *Scotorythra paludicola* (Lepidoptera: Geometridae), and a review of outbreaks between 1892 and 2003. *Pacific Science*.
- King, C. and **D. Rubinoff**. In press. Observations on the biology and current distribution of an endemic and recently rediscovered Hawaiian leafroller moth, *Omiodes continuatalis* (Crambidae). *Journal of the Lepidopterist's Society*.
- Cameron, S., **D. Rubinoff** and K. Will. 2006. Who Will Actually Use DNA Barcoding and What Will it Cost? *Systematic Biology*. **55**: 844-847.
- **Rubinoff, D.** 2006. DNA Barcoding evolves into the Familiar. *Conservation Biology*. **20**:1548-1549.
- **Rubinoff, D.** 2006. Utility of Mitochondrial DNA Barcodes in species conservation. *Conservation Biology*. **20**:1026-1033.
- **Rubinoff, D.** and W. P. Haines. 2006. *Hyposmocoma molluscivora* description. *Science* **311**:1377.
- Prado, S. S. **D. Rubinoff** and R. P.P. Almeida. 2006. Vertical Transmission of a Pentatomid Caeca-associated Symbiont. *Annals of the Entomological Society of America*. **99**. pp. 577-585.
- **Rubinoff, D.**, S. Cameron, and K. Will. 2006. Are plant DNA barcodes a search for the Holy Grail? *Trends in Ecology and Evolution* **21**: 1-2.
- **Rubinoff, D.**, S. Cameron, and K. Will. 2006. A Genomic Perspective on the Shortcomings of Mitochondrial DNA for "Barcoding" Identification. *Journal of Heredity* **97**: 581-594.

## Dr. Brent Sipes (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3190 Maile Way, St. John 309

Honolulu, HI 96822

Phone: 808-956-7813

Fax: 808-956-2832

Email: [sipes@hawaii.edu](mailto:sipes@hawaii.edu)

### Research Areas

- **Plant-parasitic nematode control.** A pragmatic approach that utilizes cultural practices, cover crops, biological and chemical control, host-plant resistance, systemic acquired resistance, and genetic engineering for nematode control in tropical crops.
- **Plant-parasitic nematode biology.** Studies on the population genetics and biology of tropical plant-parasitic nematodes.
- **Nematodes and the Soil Ecosystem.** Investigations into the soil-food web and the role that nematodes play, molecular methods to determine nematode community structure and ecological parameters, predators and parasites of nematodes in the soil.

### Selected Recent Publication

- **B.S. Sipes**, E.C. Caswell-Chen, J.-L. Sarah, and W.J. Apt. 2005. Nematode parasites of pineapple. Pp. 709-731. in Plant-parasitic nematodes in subtropical and tropical agriculture. 2nd edition. Luc, M., Sikora, R.A., and Bridge, J. eds. CAB International, Oxford.
- S.N. Ami and **B.S. Sipes**. 2008. Low-risk and sustainable compounds for controlling root-knot nematode. *Nematologia Mediterranea* 36:57-60.
- B. Chinnasri, T. Borsics, D.A. Christopher, and **B.S. Sipes**. 2008. Induction of pathogenesis-related gene 1 (PR-1) by acibenzolar-s-methyl application in pineapple and its effect to reniform nematode (*Rotylenchulus reniformis*). *ScienceAsia*: submitted.
- A.M. Ortiz, S.C. Miyasaka, J.J. Cho, and **B.S. Sipes**. 2008. Resistance and tolerance to *Meloidogyne javanica* in *Colocasia esculenta* from Thailand, Vietnam, and Nepal. *International Journal of Nematology* 18:66-70.
- C. Rabovich, R. Paull, and **B. Sipes**. 2008. Protease inhibitors and reproduction of reniform nematode in pineapple. *Annals of Applied Biology* 153:accepted.
- B. Chinnasri, **B.S. Sipes**, and D.P. Schmitt. 2006. Effects of inducers of systemic acquired resistance on reproduction of *Meloidogyne javanica* and *Rotylenchulus reniformis* in pineapple. *Journal of Nematology* 38:319-325.
- J.K. Leary, J. DeFrank, O. Kawabata, and **B. Sipes**. 2006. Tropical eggplant (*Solanum melongena* L.) production with a buffelgrass (*Pennisetum ciliare* L.) living mulch system in Hawaii. *Biological Agriculture and Horticulture* 24:105-116.
- Arcinas, **B.S. Sipes**, A.H. Hara, and M.M.C. Tsang. 2005. Effect of conditioning treatments on the survival of *Radopholus similis* at high temperatures. *Journal of Nematology* 37:250-253.
- M. Mankowski, H.K. Kaya, K. Grace, and **B. Sipes**. 2005. Differential susceptibility of subterranean termite castes to entomopathogenic nematodes. *Biocontrol Science and Technology* 15:367-377.
- **B.S. Sipes**, D.P. Schmitt, K. Xu, and M. Serracin. 2005. Esterase polymorphism in *Meloidogyne konaensis*. *Journal of Nematology* 37:438-443.
- G. Taniguchi, T. Thompson, and **B. Sipes**. 2005. Control of the big-headed ant, *Pheidole megacephala* (Hymenoptera:Formicidae) in pineapple cultivation using Amdro in bait stations. *Sociobiology* 45:1-7.

## Dr. Janice Y. Uchida (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and human resources

University of Hawaii at Manoa

3190 Maile Way, St. John 304

Honolulu, Hawaii 96822

Phone: 808-956-2827/8593

Fax: 808-956-2832

Email: [juchida@hawaii.edu](mailto:juchida@hawaii.edu)

### Research Areas

- **Etiology of New Tropical Disease:** The continuous importation of new plants into the state has been accompanied by the introduction of new pathogens. Although we address all plants, we are generally focused on orchids, ornamentals, landscape, fruit, and vegetable crops. International movement of ornamentals is recognized as a pathway for global pathogen movement. New pathogens are pure cultured, hosts are challenged and causal agents are confirmed. We also conduct routine diagnostic disease analysis for nurserymen and farmers.
- **Pathogen Population Biodiversity:** Pathogenicity, statewide distribution, genetic, morphological characteristics and molecular analysis of pathogen populations to determine phylogenetic and pathogenic relationships among isolates in selected fungal pathogen species. We are currently working on *Puccinia psidii* the new rust of ohia and other Myrtaceae and *Fusarium oxysporum* on *Acacia koa*. The rust research spans the globe with cooperators in Brazil, the Caribbean, and Australia.
- **Determination of fungicide efficacy:** Disease control efforts require the screening of fungicides to identify fungicides that will control diseases. New fungicides and low risk environmentally friendly compounds are being tested. Currently field testing fungicides for orchid diseases, *P. psidii*, and *Coleosporium* on plumeria. Lab tests on *P. psidii*.

### Selected Recent Publications:

- **Uchida, J.**, Kadooka, C., and Anderson, R. 2008. Current research results of *Puccinia psidii*, the guava rust, in Hawaii. *Phytopathology* 98: (Abstract)
- Loope, L., **Uchida, J.**, and Mehrhoff, L. 2007. The Threat of the Non-native Rust *Puccinia psidii* to Hawaiian Biodiversity and Native Ecosystems: A Case Example of the Need for Prevention. *Proceedings of the 2007 George Wright Soc. Conf.* 112–117.
- **Uchida, J.**, Zhong, S. and Killgore, E. 2006. First Report of a Rust Disease on Ohia caused by *Puccinia psidii* in Hawaii. *Plant Dis.* 90:524.
- Swett, C. and **Uchida, J.** 2006. “Four *Fusarium* species causing Diseases on Orchids in Hawaii.” *Phytopathology* 96:S112 (Abstract)
- Thorpe, D.J., Harrington, T.C. and **Uchida, J.Y.** 2005. Pathogenicity, internal transcribed spacer-DNA variation and human dispersal of *Ceratocystis fimbriata* on the family Araceae. *Phytopathology* 95:316-323.
- M.L. Elliott, T.K. Broschat, **J.Y. Uchida** and G.W. Simone, Editors. 2004 *Compendium of Ornamental Palm Diseases and Disorders*. APS Press USA.
- Aragaki, M. and **J.Y. Uchida**. 2001. Morphological Distinctions between *Phytophthora capsici* and *P. tropicalis* sp. nov. *Mycologia* 93:137-145.

## Dr. Koon-Hui Wang (Tropical Plant Pathology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way, Gilmore 310

Honolulu, HI 96822

Phone: 808-956-2445

Fax: 808-956-2428

Email: [koonhui@hawaii.edu](mailto:koonhui@hawaii.edu)

Webpage : [http://www.ctahr.hawaii.edu/peps/people/fac/profile\\_wang\\_koon\\_hui.htm](http://www.ctahr.hawaii.edu/peps/people/fac/profile_wang_koon_hui.htm)

### Research Areas (Ecological Based Pest Management)

- Developing **cover cropping system** for above (insects and weeds) and below (nematodes) ground pest management for vegetable production by manipulating cover cropping practices (strip-tilling, living mulch, organic mulch etc). We use nematode community analysis as **soil health bio-indicators**. Most recently, we have a new project funded to identify allelopathic compounds in sunn hemp responsible for suppression of plant-parasitic nematodes.
- Developing **alternatives to soil fumigants** for pineapple production: We are developing IPM strategies (integrating sunn hemp cover cropping and solarization practices) to ‘rehabilitating ex-urea and ex-nematicide addicts’ in pineapple production.
- Developing management strategies for widely found but commonly being ignored **plant-parasitic nematode**, *Helicotylenchus multicinctus*, damaging **banana** plantings in Hawaii.
- Evaluating the potential use of imidacloprid and less susceptible banana cultivars to fight **banana bunchy top virus**.

### Selected Recent Publications

- **Wang, K.-H.**, B. S. Sipes, D. P. Schmitt, A. E. MacGuidwin, M. McKenry, T.J. Bliss, B.R. Kerry, and S. Costa. 2008. Plant nematological contributions to phytopathology. APSnet Plant Pathology Online, St. Paul, MN. <http://www.apsnet.org/online/feature>.
- **Wang, K.-H.**, and R. McSorley. 2008. Exposure time to lethal temperatures for *Meloidogyne incognita* suppression and its implication for soil solarization. J. Nematology 40: 7-12.
- **Wang, K.-H.**, R. McSorley, R. N. Gallaher, N. Kokalis-Burelle. 2008. Cover crops and organic mulches for nematode, weed, and plant health management. Nematology 10: 231-242.
- McSorley, R., **K.-H. Wang**, and G. Church. 2007. Suppression of root-knot nematodes in natural and agricultural soils. Applied Soil Ecology 39: 291-298.
- Saha, S., **K.-H. Wang**, R. McSorley, R. J. McGovern, N. Kokalis-Burelle. 2006. Effect of solarization and cowpea cover crop on plant-parasitic nematodes, pepper yields, and weeds. Nematopica 37: 51-63.
- **Wang, K.-H.**, R. McSorley, N. Kokalis-Burelle. 2006. Effects of cover cropping, solarization, and soil fumigation on nematode communities. Plant and Soil 286: 229-243.
- **Wang, K.-H.**, R. McSorley, P. Bohlen, and S. M. Gathumbi. 2006. Cattle grazing increases microbial biomass and alters soil nematode communities in subtropical pastures. Soil Biol. Biochem 38: 1956-1965.
- **Wang, K.-H.**, R. McSorley, A. J. Marshall, and R. N. Gallaher. 2006. Influence of *Crotalaria juncea* as an organic fertilizer and ammonium nitrate on the nematode communities. Applied Soil Ecology 31: 186-198.

## Dr. Mark G. Wright (Entomology)

### Department of Plant and Environmental Protection Sciences

College of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way Room 310

Honolulu, HI 96822, USA

Phone: 808-956-7670

Fax: 808-956-2428

Email: [markwrig@hawaii.edu](mailto:markwrig@hawaii.edu)

Webpage: <http://www.ctahr.hawaii.edu/wrightm/>

### Research Areas

- **Insect pest management / integrated pest management:** Management of insect pests of tropical fruit and nut crops using mutually compatible suppression methods; biological control of invasive pests; insect ecology (insect behavior, interactions with environment and other species with special reference to pest management).

### Selected Recent Publications

- Kaufman, L.V. & **Wright, M.G.** Quantification of the impact of exotic parasitoids on populations of the native Hawaiian moth *Udea stellata* (Lepidoptera: Crambidae) using life table studies. *Oecologia* (In press).
- Kaufman, L.V. & **Wright, M.G.** Life history, seasonal phenology and parasitism of the Hawaiian endemic moth *Udea stellata* (Lepidoptera: Crambidae). *Annals of the Entomological Society of America* 102 (In Press).
- Hooks, C.R.R., **Wright, M.G.**, Kabasawa, D., Manandahr, R. & Almeida, R.P.P. Effect of Banana Bunchy Top Virus infection on morphology and growth characteristics of banana. *Annals of Applied Biology* 105: 1-9 .
- Le Roux, J.J., Wiczeorek, A.M, **Wright, M.G.** & Tran, C.T. 2007. Super-genotype: global monoclonality defies the odds of nature. *PLoS ONE*. In Press.
- **Wright, M.G.**, Follett, P.A. & Golden, M. 2007. Long-term patterns and feeding sites of southern green stink bug ( Hemiptera: Pentatomidae) in Hawaii macadamia orchards, and sampling for management decisions. *Bulletin of Entomological Research*. In Press.
- Robson, J.D., **Wright, M.G.** & Almeida, R.P.P. Biology of *Pentalonia nigronervosa* Coq. (Hemiptera, Aphididae) on banana. *Environmental Entomology* 36: 46-52.
- Robson, J.D., **Wright, M.G.** & Almeida, R.P.P. 2006. Within-plant spatial distribution and binomial sampling of *Pentalonia nigronervosa* Coquerel (Hemiptera: Aphididae) on banana in Hawai'i. *Journal of Economic Entomology* 99: 2185-2190.
- Messing, R.H. & **Wright, M.G.** 2006. Biological control of invasive species: solution or pollution? *Frontiers in Ecology and Environment* 4: 132-140.
- Golden, M., Follett, P.A. & **Wright, M.G.** 2006. Assessing *Nezara viridula* (Hemiptera: Pentatomidae) feeding damage in macadamia nuts using a biological stain. *Journal of Economic Entomology* 99: 822-827.
- **Wright, M.G.**, Kuhar, T.P., Diez, J.M. & Hoffmann, M.P. 2005. Effective augmentative biological control – importance of natural enemy dispersal, host location, and post-release assessment. *International Symposium on Biological Control of Arthropods*, USDA Forest Service, Publication FHTET-2005-08. pp. 495-500.
- **Wright, M.G.**, Hoffmann, M.P., Kuhar, T.P., Gardner, J. & Pitcher, S.A. 2005. Evaluating risks of biological control introductions: a probabilistic risk-assessment approach. *Biological Control* 35: 338-347.
- **Wright, M.G.** & 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. & **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. & **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.

**Dr. Julian R. Yates III (Entomology)****Department of Plant and Environmental Protection Sciences**

College Of Tropical Agriculture and Human Resources

University of Hawaii at Manoa

3050 Maile Way, Room 607

Honolulu, Hawaii 96822-2271

Phone: 808-956-6747

Fax: 808-956-2458

Email: [yates@hawaii.edu](mailto:yates@hawaii.edu)

Webpage:

Termite Project: <http://www2.hawaii.edu/~entomol>

**Research Areas**

- Biology, Ecology and Control of termites

**Selected Recent Publications**

- **Yates, J. R., III.** 2007. Residential perimeter treatment trials in Hawaii with Thiamethoxam, Termidor and Premise. *Proc. Hawaiian Entomological Society* 39: 145-148.
- Grace, J. K., **J. R. Yates III**, M. Aihara-Sasaki, G. Lillich. 2007. Community education for better termite control in Hawaii. *Proc. of the Hawaiian Entomological Society* 39: 139-142.
- Grace, J. K., M. Aihara-Sasaki and **J.R. Yates**. 2004. Differences in tunneling behavior of *Coptotermes vastator* and *Coptotermes formosanus* (Isoptera: Rhinotermitidae). *Sociobiology* 43:153-158.
- **Yates, J.R. III**, J.K. Grace & J.N. Reinhardt. 2003. Installation guidelines for the Basaltic Termite Barrier: A particle barrier to Formosan subterranean termites (summary). *Sociobiology* 41: 113-114.