

UF/IFAS High Impact RESEARCH PUBLICATIONS



IFAS scientists are truly changing the world through the impacts of their research. New knowledge generated by IFAS researchers is evaluated and validated by the scientific community and shared in our research publications.

The impacts of our research are broad, and can be manifested in many different ways, including:

- *impacts on science by extending the frontiers of fundamental scientific understanding*
- *impacts on agricultural production by improving agricultural practices and creating new agricultural varieties and technologies*
- *impacts on human welfare by improving human health*
- *impacts on the environment by providing the key for environmentally sustainable practices*
- *impacts on the economy by spawning new products, technologies, businesses, and jobs.*

Inside are 40 of the recent UF/IFAS publications that are recognized as having especially important impacts. The 10 publications printed on the inside cover were selected for special recognition at the 2015 UF/IFAS Research Awards Ceremony.

Ocsoy, I., M. L. Paret, M. A. Ocsoy, S. Kunwar, T. Chen, M. You, and W. Tan, (2013). **Nanotechnology in Plant Disease Management: DNA-Directed Silver Nanoparticles on Graphene Oxide as an Antibacterial Against *Xanthomonas perforans*.** *ACS NANO Publication*, 7(10), 8972-8980.

Purvis, C. P., R. V. Barnett, and L. Forthun, (2014). **Parental Involvement During Adolescence and Contraceptive Use in College.** *Journal of Adolescent and Family Health*, 6(2), Article 3, 1-17.

Porazinska, D. L., I. Fujisaki, M. F. Purcell, and R. M. Giblin-Davis, (2014). **Plant Invasions From a Belowground Nematocentric Perspective.** *Soil Biology and Biochemistry*, 77, 213-220.

Quesenberry, K., P. Munoz, A. Blount, K. Kenworthy, and W. Crow, (2014). **Breeding Forages in Florida for Resistance to Nematodes.** *Crop and Pasture Science*, 65(11), 1192-1198.

Qureshi, J. A., B. C. Kostyk, and P. A. Stansly, (2014). **Insecticidal Suppression of Asian Citrus Psyllid *Diaphorina citri* (Hemiptera: Liviidae) Vector of Huanglongbing Pathogens.** *PLoS One*, 9(12), e112331.

Sapp, A. M., A. B. Mogen, E. A. Almand, F. E. Rivera, L. N. Shaw, A. R. Richardson, and K. C. Rice, (2014). **Contribution of the Nos-Pdt Operon to Virulence Phenotypes in Methicillin-Sensitive *Staphylococcus Aureus*.** *PLoS One*, 9(10), e108868.

Schwieterman, M. L., T. A. Colquhoun, L. M. Bartoshuk, E. A. Jaworski, J. L. Gilbert, D. M. Tieman, A. Z. Odabasi, H. R. Moskowitz, K. M. Folta, H. J. Klee, C. A. Sims, V. M. Whitaker, and D. G. Clark, (2014). **Strawberry Flavor: Diverse Chemical Compositions, a Seasonal Influence, and Effects on Sensory Perception.** *PLoS One*, 9(2), e88446.

Tonini, F., H. H. Hochmair, R. H. Scheffrahn, and D. L. Deangelis, (2013). **Simulating the Spread of an Invasive Termite in an Urban Environment Using a Stochastic Individual-Based Model.** *Environmental Entomology*, 42(3), 412-423.

Tovar-Aguilar, J. A., P. F. Monaghan, C. A. Bryant, A. Esposito, M. Wade, O. Ruiz, and R. J. McDermott, (2014). **Improving Eye Safety in Citrus Harvest Crews Through the Acceptance and Use of Personal Protective Equipment, Community-Based Participatory Research, Social Marketing and Community Health Workers.** *Journal of Agromedicine*, 19(2), 107-116.

Wald, D. M., and S. K. Jacobson, (2014). **A Multivariate Model of Stakeholder Preference for Lethal Cat Management.** *PLoS One*, 9(4), e93118.

Zotarelli, L., L. R. Rens, D. J. Cantliffe, P. J. Stoffella, D. Gergela, and D. Fourman, (2014). **Nitrogen Fertilizer Rate and Application Timing for Chipping Potato Cultivar Alantic.** *Agronomy Journal*, 106(6), 2215-2226.

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Invasive Plants



Pest Control



Air Quality

Invasive Plants

Flory, S. L. and J. T. Bauer, (2014). Experimental Evidence for Indirect Facilitation Among Invasive Plants. *Journal of Ecology*, 102, 12-18.

Pest Control

Iglesias, L. E., T. W. Nyoike, and O. E. Liburd, (2014). Effect of Trap Design, Bait Type and Age on Captures of *Drosophila suzukii* (Diptera: Drosophilidae) in Berry Crops. *Journal of Economic Entomology*, 107, 1508-1518.

Air Quality

Kröger, T., F. J. Escobedo, J. L. Hernandez, S. Varela, S. Delphin, J. R. B. Fisher, and J. Waldron, (2014). Reforestation as a Novel Abatement and Compliance Measure for Ground-Level Ozone. *Proceedings of the National Academy of Sciences USA (PNAS)*, 111(40), E4204-E4213.

Human Health

DeRatt, B. N., M. A. Ralat, O. Kabil, Y. Y. Chi, R. Banerjee, and J. F. Gregory III, (2014). Vitamin B-6 Restriction Reduces the Production of Hydrogen Sulfide and its Biomarkers by the Transsulfuration Pathway in Cultured Human Hepatoma Cells. *The Journal of Nutrition*, 144(10), 1501-1508.



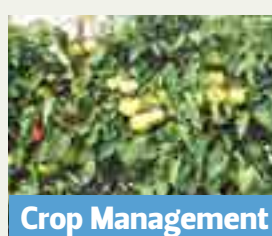
Human Health



Quantifying Biodiversity



Virus Transmission



Crop Management

Quantifying Biodiversity

Valle, D., B. Baiser, C. W. Woodall, and R. Chazdon, (2014). Decomposing Biodiversity Data Using the Latent Dirichlet Allocation Model, a Probabilistic Multivariate Statistical Method. *Ecology Letters*, 17(12), 1591-1601.

Virus Transmission

Shin, D., A. Civana, C. Acevedo, and C. T. Smartt, (2014). Transcriptomics of Differential Vector Competence: West Nile Virus Infection in Two Populations of *Culex pipiens quinquefasciatus* Linked to Ovary Development. *BMC Genomics*, 15(1), 513.

Crop Management

Hendricks, G. S., S. Shukla, T. A. Obreza, and W. G. Harris, (2014). Measurement and Modeling of Phosphorous Transport in Shallow Groundwater Environments. *Journal of Contaminant Hydrology*, 164, 125-137.



Youth Drug Use



Coral Reef Health



Citrus Greening

Youth Drug Use

Kumaran, M., K. Fogarty, A. Terminello, and W. M. Fung, (2014). The Florida 4-H Health Rocks! Program in Florida: Outcomes on Youth Tobacco, Alcohol, and Other Substance Abuse Prevention. *Journal of Youth Development*, 9(2), 65-76.

Coral Reef Health

Krediet, C. J., K. B. Ritchie, A. Alagely, and M. Teplitski, (2013). Members of Native Coral Microbiota Inhibit Glycosidases and Thwart Colonization of Coral Mucus by an Opportunistic Pathogen. *The ISME Journal*, 7, 980-990.

Citrus Greening

Hajeri S., N. Killiny, C. El-Mohtar, W. O. Dawson, and S. Gowda, (2014). *Citrus tristeza virus*-Based RNAi in Citrus Plants Induces Gene Silencing in *Diaphorina citri*, a Phloem-Sap Sucking Insect Vector of Citrus Greening Disease (Huanglongbing). *Journal of Biotechnology*, 176, 42-49.

Adewopo, J. B., M. L. Silveira, S. Xu, S. Gerber, L. E. Sollenberger, and T. A. Martin, (2014). Management Intensification Impacts on Soil and Ecosystem Carbon Stocks in Subtropical Grasslands. *Soil Science Society of America Journal*, 78(3), 977-986.

Alvarez, S., S. L. Larkin, J. C. Whitehead, and T. Haab, (2014). A Revealed Preference Approach to Valuing Non-Market Recreational Fishing Losses From the Deepwater Horizon Oil Spill. *Journal of Environmental Management*, 145(1), 199-209.

Artiaga, B. L., R. L. Whitener, C. R. Staples, and J. P. Driver, (2014). Adjuvant Effects of Therapeutic Glycolipids Administered to a Cohort of NKT Cell-Diverse Pigs. *Veterinary Immunology and Immunopathology*, 162(1-2), 1-13.

Babu, B., H. Dankers, E. Newberry, T. Schubert, C. Baker, G. Knox, M. Paret, (2014). First Report of Rose Rosette Virus Associated with Rose Rosette Disease Infecting Knockout Roses in Florida. *Plant Disease*, 98(10), 1449.

Cheesman, A. W., B. L. Turner, and K. R. Reddy, (2014). Forms of Organic Phosphorus in Wetland Soils. *Biogeosciences*, 11(6), 6697-6710.

da Silva, V. R., M. A. Ralat, E. P. Quinlivan, B. N. DeRatt, T. J. Garrett, Y. Y. Chi, H. F. Nijhout, M. C. Reed, and J. F. Gregory III, (2014). Targeted Metabolomics and Mathematical Modeling Demonstrate that Vitamin B-6 Restriction Alters One-Carbon Metabolism in Cultured HepG2 Cells. *American Journal of Physiology - Endocrinology and Metabolism*, 307(1), E93-E101.

Fan, J., Z. He, L. Q. Ma, Y. Yang, and P. J. Stoffella, (2014). Impacts of Calcium Water Treatment Residue on the Soil-Water-Plant System in Citrus Production. *Plant and Soil*, 374(1-2), 993-1004.

Galdiano Jr., R. F., E. G. de Macedo Lemos, R. T. de Faria, and W. A. Vendrame, (2014). Seedling Development and Evaluation of Genetic Stability of Cryopreserved *Dendrobium Hybrid Mature Seeds*. *Applied Biochemistry and Biotechnology*, 172(5), 2521-2529.

Jeon, S. J., M. Oh, W. S. Yeo, K. N. Galvão, and K. C. Jeong, (2014). Underlying Mechanism of Antimicrobial Activity of Chitosan Microparticles and Implications for the Treatment of Infectious Diseases. *PLoS One*, 9(3), e92723.

Johnson, E. G., J. Wu, D. B. Bright, and J. H. Graham, (2014). Association of 'Candidatus Liberibacter Asiaticus' Root Infection, but not Phloem Plugging with Root Loss on Huanglongbing-Affected Trees Prior to Appearance of Foliar Symptoms. *British Society for Plant Pathology*, 63(2), 290-298.

Juliano, S. A., G. S. Ribeiro, R. Marciel de Freitas, M. G. Castro, C. Codeço, R. Lourenço de Oliveira, and L. P. Lounibos, (2014). She's a Femme Fatale: Low-Density Larval Development Produces Good Disease Vectors. *Memórias do Instituto Oswaldo Cruz*, 109(8), 96-103.

Kisekka, I., K. W. Migliaccio, R. Muñoz-Carpena, B. Schaffer, T. H. Boyer, and Y. Li, (2014). Simulating Water Table Response to Proposed Changes in Surface Water Management in the C-111 Agricultural Basin of South Florida. *Agricultural Water Management*, 146, 185-200.

Koeser, A. K., E. F. Gilman, M. Paz, and C. Harchick, (2014). Factors Influencing Urban Tree Planting Program Growth and Survival in Florida, United States. *Urban Forestry & Urban Greening*, 13(4), 1-7.

López, Y., J. Seib, K. Woodard, K. Chamusco, L. Sollenberger, M. Gallo, S. L. Flory, and C. Chase, (2014). Genetic Diversity of Biofuel and Naturalized Napiergrass (*Pennisetum purpureum*). *Invasive Plant Science and Management*, 7(2), 229-236.

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McCray, J. M., K. T. Morgan, L. Baucum, and S. Ji, (2014). Sugarcane Yield Response to Nitrogen on Sand Soils. *Agronomy Journal*, 106(4), 1461-1469.

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Neale, D. B., J. L. Wegrzyn, K. A. Stevens, A. V. Zimin, D. Puiu, M. W. Crepeau, C. Cardeno, M. Koriabine, A. E. Holtz-Morris, J. D. Liechty, P. J. Martinez-Garcia, H. A. Vasquez-Gross, B. Y. Lin, J. J. Zieve, W. M. Dougherty, S. Fuentes-Soriano, L. S. Wu, D. Gilbert, G. Marçais, M. Roberts, C. Holt, M. Yandell, J. M. Davis, K. E. Smith, J. F. D. Dean, W. W. Lorenz, R. W. Whetten, R. Sederoff, N. Wheeler, P. E. McGuire, D. Main, C. A. Loopstra, K. Mockaitis, P. J. deJong, J. A. Yorke, S. L. Salzberg, and C. H. Langley, (2014). Decoding the Massive Genome of Loblolly Pine Using Haploid DNA and Novel Assembly Strategies. *Genome Biology*, 15, R59.