

Focus Team Year in Review

January –December 2010

G1F4 – Protecting Florida from Existing and Emerging Pests and Diseases

Faculty (as of 2/14/11-data are preliminary; do not distribute as final or use in reporting)

	Faculty Name	Unit	Effort*
1	Alleyne, John C	Highlands County - South	10%
2	Andreasen, Jr, Arland M	Washington County - Northwest	5%
3	Bactawar, Basil R	Union County - Northeast	5%
4	Beckford, Fitzroy B	Lee County - South Central	5%
5	Bolques, Alejandro	Gadsden County - Northwest	5%
6	Chen, Jianjun	Mid-Florida REC - Apopka	30%
7	Connelly, Cynthia R	FL Medical Ento Lab - Vero Beach	95%
8	Crane, Jonathan H	Tropical REC - Homestead	28%
9	Cuda, James P	Entomology & Nematology	35%
10	Culbert, Daniel F	Okeechobee County - South	5%
11	Dahl, Geoffrey E	Animal Sciences	10%
12	Dittmar, Peter J	Horticultural Sciences	15%
13	Dufault, Nicholas S	Plant Pathology	5%
14	Eckhardt, Erin Harlow	Duval County - Northeast	15%
15	Ellis, James D	Entomology & Nematology	20%
16	Evans, Edward A	Tropical REC - Homestead	40%
17	Fasulo, Thomas R	Entomology & Nematology	75%
18	Fedunak, Charles A	Lake County - Central	3%
19	Fishel, Frederick M	Agronomy	100%
20	Frank, J H	Entomology & Nematology	50%
21	Friday, Theresa Lynn	Santa Rosa County - Northwest	2%
22	Gamble, Sharon F	Volusia County - Central	2%
23	Gazula, Aparna	Alachua County - Northeast	10%
24	Gillett-Kaufman, Jennifer L	Entomology & Nematology	20%
25	Gioeli, Kenneth Thomas	St. Lucie County - South	50%
26	Goodchild, Michael J	Walton County - Northwest	10%
27	Harmon, Carrie Lapaire	Plant Pathology	100%
28	Henry, Mary E	Polk County - South Central	60%
29	Hodges, Amanda C	Entomology & Nematology	90%
30	Hogue, Patrick J	Okeechobee County - South	5%
31	Holmes, David B	Marion County - Central	5%
32	Hunsberger, Adrian	Miami-Dade County - South	10%
33	Jeansonne, Brent E	Volusia County - Central	15%
34	Kaufman, Phillip E	Entomology & Nematology	100%
35	Kern, Jr, William H	Ft Lauderdale - REC	50%

36	Knox, Gary W	North Florida REC - Quincy	20%
37	Koehler, Philip G	Entomology & Nematology	100%
38	Lamberts, Mary L	Miami-Dade County - South	55%
39	Lands, Steven C	St. Johns County - Central	25%
40	Langeland, Kenneth A	Agronomy	100%
41	Leppla, Norman C	Entomology & Nematology	100%
42	Liburd, Oscar E	Entomology & Nematology	5%
43	Lollar, Matthew C	Seminole County - Central	6%
44	Mackay, Wayne A	Mid-Florida REC - Apopka	10%
45	McAvoy, Eugene J	Hendry County - South	5%
46	Minogue, Patrick J	North Florida REC - Quincy	25%
47	Mizell, III, Russell F	North Florida REC - Quincy	75%
48	Ozores-Hampton, Monica P	Southwest Florida REC - Immokalee	10%
49	Palmateer, Aaron J	Tropical REC - Homestead	60%
50	Pereira, Roberto M	Entomology & Nematology	100%
51	Price, James F	Gulf Coast REC - Balm	100%
52	Sellers, Brent A	Range Cattle REC - Ona	20%
53	Smith, Clyde A	Jackson County - Northwest	100%
54	Smith, Jason A	Sch Forest Resources & Cons	45%
55	Stansly, Philip A	Southwest Florida REC - Immokalee	10%
56	Tabachnick, Walter J	FL Medical Ento Lab - Vero Beach	100%
57	Taylor, Jennifer	FAMU	10%
58	Unruh, Joseph B	West Florida REC, Milton	10%
59	Webb, Susan E	Entomology & Nematology	100%
60	Whitaker, Vance M	Gulf Coast REC - Balm	5%
61	Xin, Jiannong	IFAS IT	50%
62	Zhang, Shouan	Tropical REC - Homestead	15%

* Represents the faculty member's estimated time spent in this focus area as a portion of all programmatic effort expended during the year.

Clientele Contacts (as of 2/14/11-data are preliminary; do not distribute as final or use in reporting)

Comparison Group	Educational Materials	Field Visits	Office Visits	Group Participation	Phone Consults	Email Consults	Web Visits*
G1F4	523	995	4,045	36,330	9,974	15,063	11,573,941
Goal 1	13,343	17,553	29,439	326,041	102,302	145,931	30,738,009
All Goals	38,096	118,372	185,737	3,292,232	455,158	822,856	57,855,216

*Web Visits may contain duplicated counts.

Volunteers (as of 2/14/11-data are preliminary; do not distribute as final or use in reporting)

Comparison Group	Volunteer Headcount	Volunteer Hours
G1F4	104	3,245
Goal 1	3,356	7,826
All Goals	36,508	1,428,897

Multi-State Activity (as of 2/16/11-data are preliminary; do not distribute as final or use in reporting)

State	Faculty Headcount
Alabama	4
Alaska	1
Arkansas	2
California	3
Georgia	6
Kansas	1
Kentucky	2
Louisiana	3
Massachusetts	1
Michigan	1
Mississippi	2
New Jersey	1
New York	1
North Carolina	3
Oklahoma	2
Oregon	1
South Carolina	3
Tennessee	2
Texas	4
Virginia	2
Washington	1
Southern Regional	5
Guam	1
Puerto Rico	3
US Virgin Islands	3
Unduplicated Headcount	13

Outcomes (as of 2/17/11-data are preliminary; do not distribute as final or use in reporting)

Comparison Group	Number Evaluated for Change in Knowledge	% Who Changed	Number Evaluated for Change in Behavior	% Who Changed	Number Evaluated for Change in Condition	% Who Changed
G1F4	6,201	83.2%	4,331	67.4%	2,478	84.1%
Goal 1	63,555	88.2%	40,468	66.7%	27,792	62.7%
All Goals	457,881	86.2%	340,453	78.2%	155,036	65.0%

Impacts (as of 2/18/11-data are unedited and preliminary; do not distribute as final or use in reporting)

Faculty (Author)	Unit	Impact/Outcome/Success Story
Beckford, Fitzroy B	Lee County - South Central	The ability to identify and control exotic plant (and wildlife) species effectively and economically are important aspects of natural resources management planning. Training opportunities offered by the IFAS Lee County Natural Resources Education Program provides the major means through which local land and aquatic businesses and governmental agencies receive current information and necessary skill development in invasive species management control. Similar course programs provided outside the county at major conferences costs an average of \$475 per participant indicating a savings to Lee County (residents and County government) of \$125,400.00 per seminar.
Bolques, Alejandro	Gadsden County - Northwest	<p>In 2010, 68 nursery and landscape maintenance personnel attend four extension programs that provided knowledge and skills in nursery production, pest management options, new product information, and pesticide-use and safety to better manage their business operation and the environment.</p> <p>Pre/post evaluation, n=3, 15% increase in knowledge for Statewide Integrated Pest Management Update program.</p> <p>Participants, n=3, indicated a that they would continue to adopt and implement IPM practices in their production areas to better control pest and reduce the application of chemical pesticide.</p>
Chen, Jianjun	Mid-Florida REC - Apopka	Chilli thrips, <i>Scirtothrips dorsalis</i> Hood is an invasive pest. Our work on biological control methods yielded the most promising results. Pirate bugs, <i>Orius insidiosus</i> , are the primary biological control in use to combat thrips in peppers in Florida, but two species of predatory mites, <i>Neoseiulus cucumeris</i> and <i>Amblyseius swirskii</i> , also thrive on thrips. We found that <i>A. swirskii</i> provided better control than <i>N. cucumeris</i> , and further determined that <i>A. swirskii</i> coexisted well with pirate bugs. The mites ate mostly larval thrips, and the pirate bugs ate everything: larval thrips, adult thrips and the odd mite. Used alone, both mites and pirate bugs provided effective control of chilli thrips. Used in combination, they should be even more effective, since pirate bugs will sustain themselves on mites or plant pollen when there are no thrips, maintaining a constant population of predators independent of thrips population fluctuations and keeping pepper crops thrips-free and thriving.
Connelly, Cynthia R	FL Medical Ento Lab - Vero Beach	Through 8 mosquito identification workshops, employees of state-approved mosquito control agencies in Florida received training to identify dozens of the eighty mosquito species that occur in the state. The ability to recognize the various species is critical for maintaining an effective integrated pest management program; this allows decision makers to target only the species that are responsible for disease transmission or significant pest problems. This saves tax-payer dollars on mosquito control as well as reduces the amount of insecticides that are applied against mosquitoes.
Cuda, James P	Entomology & Nematology	Over 140 people participated in Osceola County's 2010 Hydrilla and Hygrophila Field Day, held on Thursday, May 27th at Kissimmee's Lakefront Park on the shores of Lake Tohopekaliga. Researchers/extension faculty from the University of Florida, SePro Corporation as well as the U.S. Army Corps of Engineers were on-hand

		with displays, education stations, and airboat tours of affected areas of Lake Toho. Hydrilla and other invasive aquatic weeds are a direct threat to Osceola County's economy and the environment. An economic study by Florida State University in 2006 estimated that Osceola County stands to lose \$50 million of recreational income from our waters if aquatic weeds are not managed. Of the \$10 million the State spent on aquatic weed treatment in 2006-2007, half was spent in Osceola County alone. Experts and on-site exhibits highlighted results of the \$2.9 million Demonstration Project Grant awarded to Osceola County from the Environmental Protection Agency to find solutions to this environmental and economic problem. This is the only project of its kind in the country. The field day showcased the progress and findings of the Demonstration Project to stakeholders including elected officials, key community leaders, herbicide applicators, chemical companies, media, environmental organizations, agency personnel, and the public. Other attendees included professional photographers, consulting firms, local school teachers, fishing clubs, and University faculty. (Source: Orlando Star 19 (891) 4-10 June 2010 pp. 1,8,12)
Dahl, Geoffrey E	Animal Sciences	Research and field work in environmental management of cattle to reduce potential for pathogen accumulation and disease.
Dufault, Nicholas S	Plant Pathology	I have only been at UF for 3 months, so most of my work has focused on developing connections with growers and agents. Mainly assessing their needs in plant pathology.
Eckhardt, Erin Harlow	Duval County - Northeast	<p>The Restricted Use Pesticide Exams can be a difficult exam for many industry professionals. To encourage more participation and provide a comfortable learning environment for participants, the Aquatic Herbicide Applicator and the Right-of-Way Herbicide Applicator Training Workshops were developed in 2009. In 2010, each program was offered once with 26 individuals participating in the classes. Each class was designed with lecture style and hands-on components and over two hours dedicated to math calculations which is normally the most difficult portion of the exam for participants. Twenty-one individuals took the right-of-way and aquatic exams immediately following the workshops. Sixty percent passed the right-of-way and 64% passed the aquatics exam. One individual had taken the right-of-way exam four times prior to the workshop and said without the class he would not have passed on his fifth time.</p> <p>In Duval County, the 2010 estimated hourly wage for an experienced landscaper or grounds maintenance worker is \$12.97. The average hourly wage for an experienced pesticide handler or applicator is \$15.75. Assuming the individuals taking their exams are experienced landscapers, by completing the course and obtaining their licenses they can potentially increase their yearly salary earnings by \$5,560*. These two programs potentially provide an additional combined income of \$72,280 to the thirteen individuals who earned their licenses. (source: State of Florida Agency for Workforce Innovation, Occupational Employment Statistics, http://www.labormarketinfo.com/Library/OES.htm). (*based on 2,000 hours).</p>
Ellis, James D	Entomology & Nematology	<p>Title: The University of Florida AFBEE Program (African Bee Extension and Education Program)</p> <p>Goal: To help protect Florida citizens from the threat of African bees</p>

		<p>Objectives: Through this extension program, members of my lab and I seek to:</p> <ol style="list-style-type: none"> 1) educate Florida citizens about the spread and threat of African bees, 2) provide Africanized honey bee-related material and training to Florida clientele groups, 3) train Pest Control Operators how to eradicate and safely remove nesting honey bee colonies, and 4) help protect the lives of Florida citizens. <p>2009 AFBEE Program highlights include:</p> <p>*Because of the success of the pest control operator (PCO) training effort, every Florida county has PCOs trained and available to eradicate/remove nesting honey bee colonies. This is a major accomplishment. Just 3 years ago, homeowners, businesses, etc., in some counties did not have local access to trained PCOs, often paying a higher price for removals.</p> <p>*Over 27,000 items were downloaded from AFBEE.com, the program’s website, in 2010. These include educational documents, presentations, and videos, many of which likely were used to educate FL citizens about the spread and threat of African bees.</p> <p>*The 14 EDIS documents I have coauthored on African bees were downloaded 35,762 times in 2010.</p> <p>*Florida PCOs have removed thousands of wild honey bee colonies from areas where people frequent. This surely has lessened the number of human stinging incidents. Statistics from the southwestern U.S. show that half of all human/African bee interactions occurred when the victim knew the bee nest was present but did nothing about it. As a result of our training efforts, PCOs have responded by removing thousands of colonies that may later have led to significant safety issues.</p> <p>*Over 900 first responders have been trained through the AFBEE program.</p> <p>*Eradicating wild honey bee colonies nesting in close proximity to people is an unpopular message for the general public. To that end, members of the AFBEE program work with county faculty, PCO’s, beekeepers, etc., in an effort to spread the message that African bee presence and general decline of managed bees are two different issues. Hundreds (maybe thousands) of Florida residents have followed our recommendations to have colonies eradicated/removed rather than simply “relocated” .</p>
Fasulo, Thomas R	Entomology & Nematology	<p>Pest Alert - The PestAlert-L listserv has over 680 subscribers world-wide. The PestAlert site recorded 323,412 page views in 2010.</p> <p>Featured Creatures - This site on existing and emerging pests, recorded 5,260,092 page views this year.</p>
Fishel, Frederick M	Agronomy	<p>Pesticide Applicator Profiling: Using Polycom® Distance Delivery for Continuing Education and Characterizing Florida’s Licensed Applicators</p> <p>An Extension program that lends itself well to using Polycom® is pesticide applicator training. Applicators of restricted use pesticides are legally mandated to become certified and licensed. Also, many employers require applicators to be licensed if applying any type of pesticide. In Florida, like most states, applicators must obtain continuing education units (CEUs) on a regular basis to keep the license valid. The use of Polycom® offers a means for efficiently offering CEU programs to this</p>

		<p>audience at a statewide level. Our initial Polycom® effort was launched in 2009 with favorable results.</p> <p>Designing CEU programs can be a challenging task. A large statewide conference offers the prospect for conducting needs assessment surveys to assist in future program development. Educators have used a variety of methods to collect information for needs assessment, including written questionnaires. Extension educators regularly conduct such surveys to assist in developing programs to meet client needs. Because of the real need and success of our 2009 endeavor, a similar event was planned for 2010, on a much larger scale. Our major objectives for the 2010 program were two-fold:</p> <ul style="list-style-type: none"> * Offer CEUs to applicators. * Administer a survey to characterize our population of applicators, including their licensing characteristics and CEU needs. Creating such a profile would provide input for planning future events. <p>Based on planning committee recommendations, the 2010 event was expanded from 2009's program to include more host sites and offer more CEUs. The theme of herbicides, weeds, and their control was the focus of the agenda's topics and appropriate specialists were selected as speakers. All speaker presentations were delivered using PowerPoint format. The 6-hour program met state-approval for 6 CEUs in 12 applicator categories. Solicitation for host sites and publicizing the event was conducted from January through mid-March, 2010.</p> <p>On 30 March, 2010, the program was delivered from the UF main campus in Gainesville to 50 satellite host sites consisting of Extension offices and UF/IFAS research and education centers throughout the state. Preceding the event, a survey instrument was designed to ascertain knowledge gained, typical of an Extension program; but, we also desired to glean information that would assist us in planning future CEU events. The survey was administered by host site coordinators to audience members immediately following the program, but prior to distributing CEU credit verification forms.</p> <p>The statewide total attendance was 1,028 applicators (approximately 10% of Florida's licensed applicators). There were 667 surveys returned for a response rate of 65%. To keep licenses valid, applicators in Florida have a choice of retaking initial certification exams, earning CEUs, or a combination of the two. This survey revealed that applicators showed a strong preference for attending CEU programs as a means of renewal (92.4%). Coupled with exam anxiety, employment is at stake for many in this audience if licenses are not maintained; therefore, this is not unexpected. A similar mail survey was conducted in 2004 and showed that 95% of Florida applicators preferred to renew by obtaining CEUs.</p> <p>Slightly more than half (56.5%) stated that obtaining CEUs in their areas was at least "fairly easy." This could be interpreted that CEU providers, including Extension, are doing a reasonable job of providing opportunities; however, with more than 40% of this audience having some difficulty in locating classes in their areas, this opens up some prospect for Extension's involvement.</p>
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		<p>Most (73.9%) applicators don't mind a relatively short commute of less than 50 miles to attend an event offering CEUs. A positive response to this question declined dramatically for distances greater than 50 miles. Interestingly, 17.0% stated that they would drive any distance as long as they weren't required to reexamine. For some of this audience, resources prohibit travel expenses, which reinforce the need for distance delivery, including Polycom®.</p> <p>A fee question was put into the survey as a gauge due to increasingly tighter budgets faced by UF/IFAS. Attendance fees are strictly determined by the provider of the CEU program. There are no legal mandates in regards to what a provider may charge. More than 80% stated they would pay at least \$20 per CEU. Similar to the question concerning distance to attend a program, there remains a proportion of this audience who will also spend unlimited amounts to avoid retaking certification exams.</p> <p>The final two questions attempted to determine the audience's experience with distance technology as a CEU delivery method and the likelihood that they would attend distance programs in the future. The first of these two questions showed that Polycom® delivery was a new experience for most (68.6%). Because the response to this question was essentially identical to our 2009 effort, Polycom® remains far from reaching its full potential with the pesticide applicator population, at least in Florida. Also an extremely promising aspect of these results from an educator's perception is that the majority (97.8%) stated they would attend a future event of similar format.</p> <p>Because of the legal need, pesticide applicators are a captive audience for Extension. Polycom® offers major benefits by maximizing cost and time efficiency. Our experience has shown that licensed pesticide applicators seeking CEU courses are very willing to attend these events. These results should be an indication to Extension educators that this technology presents great potential not only for CEU classes, but for other types of programming as well.</p>
Frank, J H	Entomology & Nematology	<p>Perhaps the three 'other' programs listed below should all have been subsumed within this one program. Yet in the 'other' programs I work with personnel who operate under the focus groups mentioned.</p> <p>If, however, we accept that I have only one blanket extension program, then that program is clearly an offshoot of my one interstate research program in biological control.</p>
Gamble, Sharon F	Volusia County - Central	<p>Florida is one of the three states that has the greatest influx of emerging pests and diseases. Combined efforts have led to the formation of a Cooperative Invasive Species Management Area (CISMA) that included Volusia County. The first organizational meeting was held following presentations at the Florida Vegetative Management Association.</p> <p>Successful teamwork will result in faster identification and sequestering of invasive species.</p>
Gazula, Aparna	Alachua County - Northeast	<p>43 landscape professionals attended the Limited Certification Commercial Landscape Training workshops. 100% of Limited Certification participants surveyed displayed knowledge gain when identifying proper pesticide safety measures. 90% of Limited Certification participants surveyed displayed knowledge gain when identifying diseases of</p>

		<p>ornamentals. 97% of Limited Certification participants surveyed displayed knowledge gain about solving plant problems. 87% of Limited Certification participants surveyed displayed knowledge gain about interpreting the information on the pesticide label.</p> <p>So far 17 people have taken the Limited Commercial Landscape Maintenance certification exam. Results of the exams are pending.</p>
Gazula, Aparna	Alachua County - Northeast	<p>A total of 2,449 pesticide continuing education credits were issued for nursery growers and landscape management professionals. CEUs obtained on-line cost \$25/CEU. Therefore, the value of CEUs administered by the agent is \$61,225.</p> <p>Three Limited Commercial Landscape Maintenance pesticide license certification classes, five Green Industries Best Management Practices certification classes were offered by the agent. A total of 96 participants attended these training sessions. The private industry charges \$100 per attendee for these classes. Therefore, the value of training classes taught by the agent is \$9,600.</p> <p>The total value of the pesticide training provided by the agent is \$70,825.</p>
Gillett-Kaufman, Jennifer L	Entomology & Nematology	<p>Cuda, J. P., J.L. Gillett-Kaufman, J.P. Bradshaw, K.T. Gioeli, W. A. Overholt, R. Hix and J.F. Shearer. 2010. Sustainable Approach for Integrated Management of Herbicide Resistant Hydrilla in the U.S. NIFA RAMP. \$512,379 awarded.</p> <p>Leader- Hydrilla IPM Risk Avoidance and Mitigation Project</p> <p>The Entomology and Nematology Department is spearheading the Hydrilla Integrated Pest Management Risk Avoidance and Mitigation Project (Hydrilla IPM RAMP). This USDA grant funded project is designed to tackle one of the United States' most troublesome invasive plants: Hydrilla verticillata. IFAS research and extension faculty, FAMU faculty and an ARMY Corps Engineer are tackling the hydrilla problem head-on. This team is studying new chemical and biological control methods as part of an overall hydrilla integrated pest management (IPM) plan.</p> <p>The central hypothesis of this project involves integrating herbivory by a naturalized meristem mining midge <i>Cricotopus lebetis</i> Sublette (Diptera: Chironomidae) with the native fungal pathogen <i>Mycoleptodiscus terrestris</i> and low doses of a new acetolactate synthase (ALS) inhibiting herbicide (imazamox) as a viable strategy for long-term sustainable management of hydrilla. Researchers expect this IPM strategy will safely control fluridone resistant hydrilla biotypes in Florida watersheds and in other locations in the US where the resistant biotypes are expected to become established.</p> <p>As part of a 4 year plan we want to supply every county office with the material they need to educate their clientele about hydrilla IPM. Development began in 2010 on the first wave of material to be delivered at EPAF in 2011. We will advertise a new website that ties into the SFYL site and is dedicated to housing the latest recommendations for hydrilla management. Supplemental hydrilla IPM material will be distributed at EPAF in 2012, 2013 and 2014. We hope that by increasing the material we make available we will improve the programs impact and future success.</p>

		<p>We will be developing a website soon for now please visit the following websites for more information on what we are doing to manage hydrilla. The UF/IFAS Center for Aquatic and Invasive Plants: http://plants.ifas.ufl.edu/ The Osceola County Hydrilla and Hygrophila Demonstration Project Website: http://plants.ifas.ufl.edu/osceola/</p>
Gioeli, Kenneth Thomas	St. Lucie County - South	<p>The Aquatic Weed Control and Natural Areas Weed Control state pesticide licensing exams are notoriously difficult to pass. Locally, there was a 36% passing rate for untrained “walk-in” examinees. When discussing this issue with state licensing officials, they indicated that these low walk-in examinee scores were in line with the statewide passing rate for both exams. Students express difficulty with several sections of these exams including the arithmetic and pesticide properties sections. Students must earn a minimum exam score of 70% in order to successfully complete certification requirements.</p> <p>Local government and private industry expressed a need for their employees to receive training to help them achieve passing exam scores. DGC Environmental and Transfield Services are examples of companies that hired employees during the 2010 economic recession to manage wetlands and natural area weeds.</p> <p>Gioeli created aquatics and natural areas arithmetic workbooks, label activities and other educational products to use in training sessions. He was able to raise exam scores from a 36% passing rate to a 52% passing rate. This enabled 24 students to complete the licensing process which was required by their employers for continued employment.</p>
Harmon, Carrie Lapaire	Plant Pathology	<p>Most of the impact I have in Florida is through my work as the Director of the UF-IFAS Extension Plant Disease Clinic. In the 2010 calendar year, the Plant Disease Clinic, in partnership with the Southern Plant Diagnostic Network, served several client types: diagnosticians, students, and agricultural clientele in Florida and the US. For diagnosticians in the US and abroad, we developed and published to the web several laboratory procedures and recipes. We also made available photographs of plant pathogen culture plates and micrographs of spores for commonly-diagnosed plant pathogens. These tools should enable better plant pathogen detection and accurate diagnosis. All of these published materials are made freely available through the Bugwood Network resources (IPM Images and Bugwood Diagnosticians’ Cookbook). We also trained 10 UF graduate students from the departments of Plant Pathology, Agronomy, Horticulture, and Environmental Horticulture through our internship. One of those students has continued to work on her graduate research in our laboratory. Our biggest impact, logically for a service laboratory, is with our extension clientele. We processed 73 more samples in 2010 than in 2009, an increase that we believe reflects the increased level of service the clinic now provides. Each of the 2,000+ samples diagnosed resulted in a management recommendation based on UF-IFAS research and management data intended to give best management of the plant problem with least impact on human and environmental health. Of the 2143 samples processed in the lab, 594 were determined to have “no pathogen found” . We believe that knowing there is no pathogen to manage is just as important as knowing the correct pathogen and UF-IFAS-recommended management recommendation. Those crops represented by the “no pathogen found” diagnosis likely were not sprayed with unneeded pesticides, saving our</p>

		<p>clientele time and money and reducing the environmental impact of plant production and maintenance. Feedback from our clientele indicates that they are making better use of their management options, including not spraying when no pathogen is found. Increased use of molecular and chemical identification technology (PCR and Biolog) has increased the accuracy of the diagnoses, especially for new and emerging pathogens, leading to better recommendations for our clientele.</p>
Henry, Mary E	Polk County - South Central	<p>Pesticide applicators are required to obtain and maintain licenses to apply pesticides. Pesticide applicator training was reestablished at Polk County Extension in 2010. An end of the year online survey sent to those that had attended training in the first year of the program expressed their appreciation for the training in an open ended comment question. 23 out of 57 respondents chose to comment. Following are the highlights of their actual comments. "Very informative training, I do not believe I could have passed the state exam without this training provided by the Polk County Extension Office." "We schedule and coordinate training for over 50 certified applicators within our company. The training provided by extension services is very valuable to us." "IFAS does a tremendous job with the training programs they conduct." "The training course that I attended not only helped me pass my Natural Areas Exam, but has been very beneficial in my everyday job duties."</p>
Henry, Mary E	Polk County - South Central	<p>August, 2010 one article and question set on pesticide safety jargon was co-authored, published in Florida Grower Magazine for self-directed study for exams and license renewal:</p> <p>Agent continued to issue CEUs from October 2009, article on calculations for proper mixing of pesticides was published in Ornamental Outlook Magazine for self-directed study for exams and license renewal:</p> <ul style="list-style-type: none"> * 205 CEUs issued through these articles in 2010. * Saved pesticide applicators a total of \$4,100, compared to \$10 per CEU and \$10 in fuel for alternative options <p>Polk Small Farms website provided current licensing information to thousands:</p> <ul style="list-style-type: none"> * 149,368 hits from January 1 - December 1, 2010 (Urchin Livestats). * Two mailings totaling 3,204 to reestablish contact with applicators and encourage email newsletter signup * Pesticide email update list grown from less than 20 in 2009 to 171. 5,194 emails sent through this list in 2010. <p>1,514 Current or potential pesticide applicators received direct information and service under this objective in 2010.</p> <ul style="list-style-type: none"> * 359 Exams administered in 2010; 90 pesticide applicators viewed pesticide applicator videos 2- 2.5 hours in length for CEUs; 94 walk in clients; 730 phone calls; 683 personal emails <p>From 2007- Dec 2010, Agent used magazine articles to issue 519 CEUs to pesticide applicators at no cost.</p> <ul style="list-style-type: none"> * Saved pesticide applicators a total of \$10,380, compared to \$10 per CEU and \$10 in fuel for alternative options <p>\$2082.33 in funding for pesticide applicator education has been allotted to Polk County Extension as a result of the exams administered under this objective in 2010.</p>
Henry, Mary E	Polk County - South Central	<p>Polk Landscape Trade Show, 106 attended. As a result:</p> <ul style="list-style-type: none"> * Number of those responding knowledge on subjects presented was good or high increased in all subjects presented as measured by a post

		<p>evaluation asking participants to describe their knowledge before and after the program.</p> <ul style="list-style-type: none"> * 37% (33 and 61/76) increase in the number reporting good or high knowledge in pesticide safety * 47% (37 and 66/78) increase in number reporting good or high knowledge in calibrating a fertilizer spreader * 39% (28 and 58/77) increase in number reporting good or high knowledge in diagnosing symptoms of herbicide damage * 48% (31 and 68/77) increase in number reporting good or high knowledge in selection and maintenance of turfgrass cultivars * 46% (13 and 47/74) increase in number reporting good or high knowledge in sampling and treatment of Texas Phoenix Palm Decline * 93% rated the program as good or excellent <p>36 pesticide applicators attended Core Training sessions in Polk in 2010. As a result:</p> <ul style="list-style-type: none"> * 86% (30/35) will use the information every day in their work. * 94% (33/35) said the information will help them apply pesticides safely. * 97% (34/35) said the speaker was very effective at conveying the information. <p>Impacts for Objective 2: Attendees of training are able to comply with training and renewal requirements for maintaining a Florida pesticide license, necessary for their employment in a majority of cases. Participants increased their knowledge in the safe application of pesticides and will use the information every day in their work, reducing the potential for uninformed applications of pesticides and dangerous potential long term consequences on Florida's public and natural resources.</p> <p>An end of the year follow up survey of those attending pesticide applicator training in 2010 was conducted using Survey Monkey.</p> <ul style="list-style-type: none"> * 100% (57/57) of respondents said the license or certification they attended training for is important for their employment or agricultural operation. * 93% (53/57) said the training helped them to obtain or maintain a pesticide license or other certification. * 91% (52/57) said the training helped them to improve or maintain their employment because it helped them obtain or maintain a license or certification. * 97% (55/57) said they have used the information learned in their work since attending the training
Henry, Mary E	Polk County - South Central	<p>The Agent increased the passing rate for Polk County pesticide applicators in all categories instructed as compared to 2009 Polk County passing rates. The Agent increased the passing rate of Polk County to surpassing the statewide average in 3 out of 5 categories and raised one to equal the statewide average. The evaluations of restricted use exam prep sessions show:</p> <ul style="list-style-type: none"> * 89% (80/90) will use the information every day in their work. * 99% (89/90) said the information will help them apply pesticides safely. * 85% (72/85) had an overall excellent experience with the class. * 89% (79/89) said the speaker was very effective at conveying the information.

		<p>Green Industries Best Management Practices: Uninformed application of fertilizer has the potential to significantly affect water quality through nutrient leaching and runoff.</p> <p>Behavior changes as a result of the program as indicated by post program surveys:</p> <ul style="list-style-type: none"> * 79% (19/24) will use the recommended fertilization and methods presented * 75% (18/24) will inform their clients of pertinent BMP recommendations * 100% increased their knowledge as a result of the program <p>Limited Commercial Maintenance and Limited Lawn and Ornamental Exams</p> <ul style="list-style-type: none"> * 94% (47/50) responded they would absolutely (4 or 5 on a scale of 1-5) use the information presented every day on the job. * 96% (48/50) reported the training will absolutely help them to apply pesticides safely. * 94% (47/50) reported an excellent experience overall. * 78% (30/38) planned to adopt all 10 selected behaviors to apply pesticide correctly. * When asked to list three practices they planned to adopt from the training, 21 responses were volunteered. <ul style="list-style-type: none"> o Use of Integrated Pest Management, identification of pests and use of personal protective equipment were the most common practices volunteered. <p>Those attending the program and passing the exam will be able to expand the services offered through their company and better compete with other already licensed companies. Licensed individuals will also avoid a \$5,000 per infraction fee for applying pesticides without a license. Adopted behaviors should increase the safety of the applicator and the public and reduce improper pesticide application.</p>
Henry, Mary E	Polk County - South Central	<p>Outcomes for Objective 1:</p> <p>In 2010 the Agent trained 91 pesticide applicators in 10 restricted use exam prep sessions at Polk County Extension. 58 took exams. Of those that took exams:</p> <ul style="list-style-type: none"> * 100% (4/4) passed the private applicator exam as compared to a 48% (13/27) 2009 Polk County and 69% (501/724) 2009 statewide passing rate. * 50% (4/8) passed the ornamental and turf exam as compared to a 28% (7/25) 2009 Polk County and 50% (434/872) 2009 statewide passing rate. * 83% (15/18) passed the natural areas exam as compared to a 38% (10/26) 2009 Polk County and 50% (235/466) 2009 statewide passing rate. * 63% (5/8) passed the right of way exam as compared to a 27% (10/37) 2009 Polk County and 44% (281/640) 2009 statewide passing rate. * 40% (8/20) passed the aquatics exam as compared to a 36% (15/45) 2009 Polk County and 45% (359/802) 2009 statewide passing rate. <p>Green Industries Best Management Practices: The Agent trained 24 landscape professionals in one session at the Polk County Extension office in 2010.</p>

		<p>* 95% (21/22) of participants taking the exam achieved certification as measured by a score of 75% or better on a posttest by the Department of Environmental Protection.</p> <p>* The average score increased by 14% between the pre and posttests.</p> <p>* The Agent trained 35 people in Hillsborough County, 100% (33/33 exams) passed, 20% increase in pre and post test scores</p> <p>In 2010 the Agent trained 66 landscape professionals for the Limited Commercial Maintenance and Limited Lawn and Ornamental Exams in Polk County. (Passing rates for 17 exams from December program unknown at this time.)</p> <p>* 84% (16/19) of participants that took the exam achieved pesticide applicator certification as measured by passing the FDACS Bureau of Entomology Exam.</p> <p>* Agent trained 35 landscape professionals for the Limited Commercial Maintenance and Limited Lawn and Ornamental Exams in Hillsborough County.</p>
Hodges, Amanda C	Entomology & Nematology	The University of Florida was a lead organization in the release and launch of a new, multi-agency invasive species national educational initiative, Protect U.S.-the community invasive species network.
Hodges, Amanda C	Entomology & Nematology	The NPND released a module on an exotic pathogen of concern, Ralstonia solanacearum Race 3 biovar 2 in 2010. A total of 79 learners have completed the e-learning module (and associated post-test since the release. Nineteen of the learners were from Florida.
Hodges, Amanda C	Entomology & Nematology	The University of Florida coordinates the National Plant Diagnostic Network (NPND) national training and education program as the regional center for the Southern Plant Diagnostic Network (SPDN). During 2010, 249 new learners throughout the country completed the NPND crop biosecurity course. The goal of the crop biosecurity course is to protect agriculture and natural areas from exotic, invasive species.
Hogue, Patrick J	Okeechobee County - South	<p>Approximately 8,000 acres were sprayed this year with recommended controls for specific and invasive weeds identified as problems, resulting in not only control of these weeds, but also increased quality and quantity of available forage for use by cattle and other livestock</p> <p>Approximately 10,000 acres of pastures were sprayed to control an outbreak of grasshoppers that would have been destroyed by their destructive feeding, utilizing agents recommendations and thus insuring forage for livestock</p>
Holmes, David B	Marion County - Central	<p>Peaches have been grown in Marion County with limited success. Peach breeders at the University of Florida have been working on new peach varieties that will perform well in the changeable temperatures of late winter/early spring and relative high humidity that epitomizes the north central Florida climate.</p> <p>In mid-October the agent received a call from a minority peach producer regarding die-back on 20 acres of commercial peaches. Upon visiting the site the agent observed very dry soil conditions and although an irrigation pond was full, the manager indicated no irrigation had been applied. The soil profile at this site is sand, to a depth of 80 inches. Moreover, all irrigation was overhead, a practice leftover from the previous owner. While some symptoms of disease were observed, the agent does not have enough peach experience to know conclusively of peach diseases, so took photos and e-mailed them to the peach specialist. Finally, severe</p>

		<p>pruning had been conducted in mid-summer, also a practice passed on from the previous owner. It was the recommendation of the agent that one inch of water via irrigation should be applied weekly (during October, no rainfall was received), that micro irrigation be installed and that pruning be conducted during the dormant season, rather than in the summer. As a second opinion, the agent offered to arrange a visit with from UF Specialist in stone fruit, which the producer accepted. On a follow-up visit, the specialist determined there was no severe disease infestation, that the major cause of stress was the low levels of irrigation. She was able to recommend some new varieties for replacement and encouraged the producer to attend the spring peach field day at nearby Citra. The agent will follow-up with the grove manager when the peach field day (typically late April/early May) is announced. During this visit, the agent was also able to recommend a source to obtain sugar cane reeds for home production.</p> <p>38 individuals, representing a variety of application types, attended Pvt. App. Ag./Core classes while 45 individuals attended O&T classes. Impact 22 individuals from the two classes completed evaluations. 12/22 (55%) listed a practice change they would make in their work as a pesticide applicator as a result of attending the class. These practice changes result in safer conditions for the applicator or the environment or for both.</p> <p>23 individuals from the April 13, 2010, O&T class completed evaluation forms. 18/23 (78%) listed something new they had learned relative to pesticide application as a result of the course. Many of these applicators are veteran applicators, earning CEUs for existing licenses. Learning and applying new methods in their applicator work will result in safer practices or faster control of insect and disease problems, leading to monetary savings on commercial accounts.</p>
Kaufman, Phillip E	Entomology & Nematology	<p>Numerous individuals have reported tick infestations in their home and consulted me for advice in eliminating these. I always offer follow-up advice to individuals and those that have called back have reported success in their efforts. As this takes 6-12 months for elimination of the problem, these individuals returning calls are very appreciative.</p>
Kern, Jr, William H	Ft Lauderdale - REC	<p>Training Public safety first responders to safely handle Africanized honey bee emergencies.</p> <p>This training program has been so successful that almost all fire departments have been exposed to either Primary UF training or secondary training conducted by departmental safety officers.</p> <p>Training of Pest Management Professionals has reduced stinging situations substantially in South Florida based on reduction of news reports.</p>
Lamberts, Mary L	Miami-Dade County - South	<p>The ultimate goal of the pesticide training program is for attendees to become to receive a pesticide license. This requires passing at least 2 exams for a Chapter 487 license. Obtaining a pesticide license often leads to an increase in pay of up to \$5.00 per hour or the ability to keep one's job. A total of 46 people were eligible to obtain a license. This is a potential of \$509,600 in additional income.</p>
Lamberts, Mary L	Miami-Dade County - South	<p>Licensed applicators who read articles in Florida Grower and answer questions, thus earning CEUs saved approximately \$107 per person over having to travel to a program (E. Skvarch, personal communication). Since there were 72 participants, this translates into \$7,704.</p>

Lands, Steven C	St. Johns County - Central	<p>Good Neighbor Practices Grant for Farms and Schools</p> <p>Pesticide drift in agricultural areas has become a key issue in the Tri-County area. This Grant will help bridge the communication gap between schools and farms as well as educate both parties on what good neighbor practices are. Florida ranks in the top four largest populations for school children with 2.3 million students that could be affected by this study. (2006 US Census) The potential impact for drift may become more prevalent in Florida with the states requirement (2007) that elementary students spend a minimum of 150 minutes per week participating in outdoor physical activity and requirements for middle and high school students by 2009.</p> <p>As a result of this grant, schools in proximity to Florida growers will be defined, good neighbor practices will be developed and implemented to reduce the risk of drift to schools and surrounding areas, effectiveness of the training and practices will be measured and changes in grower and school behavior will be assessed. Educational material will be developed and dispersed to schools and farms with results from the study. The study is underway at a local farm and data will be collected this growing season.</p>
Langeland, Kenneth A	Agronomy	<p>A Polycorn training was held for licensed Restricted Use Pesticide Applicators in aquatic, natural areas, and right of way categories. Fifty four counties participated with a total attendance of 1,028. 65% of attendees responded to a satisfaction survey. On a scale of 1 to 5 (5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree, the following average results were obtained:</p> <p>Found event to be effective method of presenting information - 4.19</p> <p>Found format to be effective method of learning - 4.09</p> <p>Found format to be just as effective as traditional "face-to-face" learning - 3.56</p> <p>Comfortable attending an event using this format - 4.20</p> <p>Knowledge of herbicide us increased - 4.05</p> <p>Knowledge of weeds increased - 4.01</p> <p>Knowledge will help job performance - 4.07</p>
Leppla, Norman C	Entomology & Nematology	<p>Alien invasive mole crickets have been the worst insect pests of Florida pastures for decades. Insecticides available for use in pastures are either ineffective or too expensive to apply repeatedly. Therefore, biological control options have been developed by the UF/IFAS Mole Cricket Workgroup (G1, F4 Action Team) composed of researchers, Extension agents and cattlemen. We imported beneficial nematodes from South America, tested them for safe use and determined the best methods for applying them in pastures. We also imported the beneficial wasp, <i>Larra bicolor</i>, assured that it was safe to release, and determined the most useful plants for attracting and maintaining it. This information was communicated to Florida cattlemen but they had no nematode application equipment or source of the plants. Moreover, they needed additional training in mole cricket biological control. The objectives of this project were to: 1) Educate Florida ranchers in detecting and</p>

		<p>identifying pest mole crickets, 2) Help them determine the presence of the beneficial nematode, <i>Steinernema scapterisci</i>, 3) Continue commercial production of the nematode, 4) Provide application equipment on loan through county Extension offices, 5) Demonstrate use of the equipment in several counties, 6) Provide a commercial source of the <i>Spermacoce verticillata</i> plants and demonstrate establishment of plots, and 7) Provide training and supporting materials to Florida Extension Livestock Agents so they can continue to assist ranchers. Accomplishments included constructing two machines pulled by tractors for subsurface application of the nematodes, establishing a commercial source of the plants, exhibiting use of the applicators at annual meetings of the Florida Cattlemen’s Association and Florida Small Farms and Alternative Industries Conference, conducting field days in six counties to provide instruction in applying nematodes and establishing plants, producing fact sheets on mole cricket biological control plus an operation manual for the nematode application equipment, and filming training modules on detecting mole cricket damage, determining presence of the nematode and wasp, applying and establishing the nematode, and attracting and maintaining the wasp. We also established a new website containing all of the information needed to perpetuate mole cricket biological control (http://floridalivestockagents.org). As a result of this highly successful project, Florida cattlemen are able to effectively and economically protect their pastures from damage caused by mole crickets. The nematode and plants remain commercially available. A nematode applicator stationed at the Range Cattle Research and Education Center or at the Hastings Research and Education Center can be borrowed through local Extension offices by ranchers and owners or operators of small farms. Additionally, the Extension education program has the resources necessary to provide training augmented by field demonstrations for the foreseeable future.</p>
Liburd, Oscar E	Entomology & Nematology	<p>The passionvine mealybug, <i>P. minor</i>, is a major invasive pest that is currently in St. Kitts, Puerto Rico and the US Virgin Islands. This pest is a serious threat to US agriculture and each year there is an average of 240 interceptions of <i>P. minor</i> at US ports of entry. Our project involves developing mitigation steps for <i>P. minor</i> to prevent entry and establishment within the US. In addition, we are developing ‘level 1’ management programs to effectively suppress populations of <i>P. minor</i> if it becomes established in the US. So far, we have identified several natural enemies in Puerto Rico that may play an important role in regulating <i>P. minor</i> populations.</p>
McAvoy, Eugene J	Hendry County - South	<p>The South Florida Vegetable Pest and Disease Hotline, which began in 1998 as the Southwest Florida Vegetable Pest and Disease Hotline is now entering its twelfth year of publication and has emerged as the premier vegetable pest and disease newsletter in Florida.</p> <p>The 18 - 20 page hotline is produced bi-weekly during the South Florida vegetable season from August to June and now reports on the occurrence of vegetable insect and disease pests on over 120,000 acres of vegetables in South Florida. The hotline is sent directly by e-mail, fax and surface mail to over 1400 subscribers and is also reproduced and distributed by other extension agents and many other companies and businesses in Florida and throughout the country.</p> <p>The hotline has been critically acclaimed by the vegetable industry and is recognized as the definitive source of vegetable pest and disease</p>

		<p>information for south Florida. The hotline receives strong industry support and has received more than \$60,000 in contributions from sponsors since its inception.</p> <p>The hotline draws on thirty two collaborators from the vegetable industry to collect up to date information on the incidence of pests and diseases which is collated and provided to users every two weeks during the south Florida vegetable growing season. Growers call it a useful tool while industry users indicate it helps keep them on top of the overall pest and disease situation. In addition to real time situation reports the hotline provides users with research control tips from UF/IFAS and elsewhere and up to date information on pesticide label changes and regulations.</p>
Minogue, Patrick J	North Florida REC - Quincy	<p>New Website Development: An Integrated Forest Vegetation Management website is being created on the "Solutions for Your Life" website to provide current information and site-specific recommendations for silvicultural objectives, wildlife habitat management, and invasive weed control, funded under an Extension enhancement grant. In 2010, a portion of the Extension enhancement grant was also used to begin development of a Forest Vegetation Management Website within the Southern Extension Forestry Program to generate site-specific silvicultural recommendations for predominate physiographic regions and common management objectives throughout the region. This work is being accomplished through a collaborative effort with Extension Specialists Dr. Holly Ober, UF, Dr. Jimmie Yeiser at Stephen F. Austin University, Dr. Andy Ezell at Mississippi State, Drs. Dave Moorhead and David Dickens at The University of Georgia, Dr. Shep Zedaker at Virginia Tech, and Dr. Jim Miller with the US Forest Service.</p>
Mizell, III, Russell F	North Florida REC - Quincy	<p>Conducted a monitoring program with 5 pecan growers for determination of need for nut casebearer suppression. Two growers saved the cost of unneeded insecticide sprays while 3 others were able to reduce and better time spray applications.</p>
Ozores-Hampton, Monica P	Southwest Florida REC - Immokalee	<p>Evaluate yield, horticultural characteristics, and post-harvest quality of vegetables varieties for Florida industry: Tomato yellow leaf curl virus, considered by some to be the worst tomato virus worldwide, is now endemic to Florida. Management of the insect vector (whitefly) and TYLCV relies primarily on insecticides and tomato-free planting periods. Insecticide resistance is creating an urgent need for alternative management tools such as TYLCV resistant varieties. Lack of consistencies in fruit quality is a major factor for not adopting TYCLV-resistant varieties by the Florida tomato industry; therefore growers will plant TYCLV varieties in limited acreages and will continue to take the risk associated with planting susceptible varieties. Grafting vegetable crops is a potential means to increase plant vigor, nutrient uptake, and disease resistance. In Florida, continuing disease problems, lack of land for ideal crop rotation periods, increasing markets for specialty varieties that do not have disease resistance, imperfection of soil fumigation, and the impending loss of methyl bromide have contributed to increased interest in grafting tomatoes.</p>
Palmateer, Aaron J	Tropical REC - Homestead	<p>Increased timeliness and accuracy of diagnosis of plant diseases and disorders affecting commercial producers and residents of Florida.</p> <p>Outcome - Despite an increased fee approximately 500 samples were submitted in 2002 (at \$20 per sample) compared to over 1,000 samples in 2010 (at \$40 per sample).</p>

		<p>Impact</p> <p>The services provided by this program are intended to help Florida residents minimize or avoid economic losses due to plant disease outbreaks, reduce the environmental footprint due to excessive and unnecessary use of pesticides, and to assist extension faculty in the implementation of this program at the county level.</p>
Price, James F	Gulf Coast REC - Balm	The long-daunting problem of sap beetle larvae accompanying harvested fresh strawberries to consumers has been solved by careful field sanitation and applications of novaluron IGR larvacide and applications of acetamiprid rotated with bifenthrin adulticides. This advancement reduces the amount of strawberries rejected at the market and enhances lives of agricultural families.
Sellers, Brent A	Range Cattle REC - Ona	Control recommendations for <i>Hymenachne amplexicaulis</i> in Florida's natural areas were not published prior to 2010. Land managers now have the information needed to make an unbiased decision on control of this exotic invasive species. Managers of the St. Johns Water Management District have already treated >50% of <i>Hymenachne amplexicaulis</i> stands in their district.
Smith, Clyde A	Jackson County - Northwest	Five growers spoke to the RSA about changes they had made from past Perennial Peanut field days and weed control changes they would make in the future. Survey results indicate that weed control is the number one concern among perennial peanut producers. One producer told the RSA that he gets \$10.50 for clean hay but only \$5.25 for weedy hay. The difference is about \$300 per acre.
Smith, Clyde A	Jackson County - Northwest	The RSA worked with one farmer who changed his cotton variety and herbicide program to address palmer amaranth. In previous years the farmer had many weed escapes and spent over \$50 per acre to hand-weed before harvest. Using recommendations from the RSA, the farmer spent less than \$50 per acre on his total weed control program. This resulted in a savings of nearly \$40 per acre on 150 acres of cotton.
Smith, Clyde A	Jackson County - Northwest	One producer called the RSA to finalize recommendations for calcium needed to save seed for his own planting after receiving information at the Peanut Short Course. The farmers said that saving his own quality peanut seed would save him at least \$25 per acre over buying foundation seed.
Smith, Jason A	Sch Forest Resources & Cons	Proper diagnosis of Laurel Wilt in my laboratory has directly saved avocado growers money and unnecessary losses from mitigation and sanitation efforts. For example, in late summer 2009, a suspect sample was received by the UF Plant Disease Clinic and DPI from a commercial avocado grove in Miami-Dade County. Initial testing indicated that the sample was positive for LW, however, subsequent DNA analysis by my lab showed that the fungus was not the causal agent of LW, but a closely related, undescribed species that does not cause disease. Careful DNA analysis was needed to determine that 1% of the sequence differed from the pathogen and pathogenicity tests showed the fungus was not pathogenic on avocado. Although a few trees were destroyed due to scare that LW was present, our proper diagnosis allowed growers to wait for section 18 exemption status for fungicide treatment. If this had been done, the window of opportunity to treat trees due to actual presence of the pathogen could have been lost. This could have led to complete loss of the industry in Florida (worth approximately \$53 million). Additionally, had the initial diagnosis been followed and the growers treated trees, the cost of \$50/tree for 7,000 acres of trees would have also added to the losses to growers. Combining the new, faster PCR technique being developed with rapid removal and sanitation of infested trees, losses are

		likely to be reduced in avocado groves in the future. Additional outreach and extension activities will focus on this technology and will continue to support this objective.
Tabachnick, Walter J	FL Medical Ento Lab - Vero Beach	Organized and hosted a workshop on Florida mosquito control response capabilities to counteract a bioterrorist attack using pathogen infected mosquitoes. A mosquito control plan was developed based on the workshop output that is being used to develop and improve Florida and the nation's capability to respond to such an attack.
Taylor, Jennifer	FAMU	<p>Implementation of Capacity building Strategies to enhance healthy, viable and sustainable farmscape: Participatory development and implementation: several hands-on training/capacity building sessions focus included organic vegetable and fruit tree production and management, organic integrated pest management strategies, building healthy soils, propagation, USDA organic certification/how to transition to organics, etc.</p> <p>2010 Eco-farms are the Viable Solution Workshop- provided knowledge on successful eco-farm management, organic method strategies, farmer leadership, and identification of goals, possible solutions, and networking.</p> <p>2010 Introduction to Organics Workshop- provided hands-on training in organic production and farm management strategies, networking and leadership skill development.</p> <p>2010 Organic urban farming Workshop- provided hands-on training in concepts of farming in small spaces with maximum benefit and organic production and management strategies.</p> <p>2010 Transitioning to Organics Workshop - provided hands-on training and capacity building, provided information on organics, how to convert from conventional farming to organic methods, USDA the regulations, organic farming strategies, networking, leadership, etc.</p> <p>2010 Organic Integrated Pest Management Workshop- provided hands-on training in monitoring, setting traps, insect release, pest identification, etc. to enhance farmer knowledge and skill in implementing pollinator and beneficial insect habitats, and control of insect and disease pest with biological and organic integrated pest management control methods.</p> <p>2010 Organic Fruit tree Production and Management Strategies Workshop- a two day workshop provided hands-on training in growing fruit trees with organic methods including pruning, propagation, fertilizers/amendments, planting, organic method for insect control, etc.</p> <p>2010 Organic Farming Sustainable Living Two-Day Workshop Provided information benefits of organic farming and urban farming/how to build healthy soil strategies, make compost, compost tea, select seeds, manage disease, weeds, pests, plan crop rotation, plant propagation, etc. Hands-on learning.</p> <p>Participatory learning and research development-assisted student in graduate level MS degree integrated pest management research study.</p>

Webb, Susan E	Entomology & Nematology	A watermelon grower, whose crop was close to harvest, was having a very difficult time with an outbreak of melon aphids. We were able to recommend a relatively new product that is environmentally friendly, very specific to aphids. He reported later that this product completely solved his problem. In the future, this grower may be more willing to consider using products that are not broad spectrum and which preserve the beneficial insects on his farm.
Xin, Jiannong	IFAS IT	Developed Distance Diagnostic and Identification System. Extension staffs and clientele use the system to report pests and plant diseases for quick diagnosis. The system has now been adopted by the Caribbean countries as Caribbean Pest Diagnostic Network.
Zhang, Shouan	Tropical REC - Homestead	1. Completed and issued 63 diagnostic reports to vegetable growers in which management measures were provided. Accurate and timely diagnosis of diseases provides vegetable growers state-of-art scientific knowledge and proper guidance for disease management. It is quite time-consuming for disease diagnostics. I spent an average of 2 days for each sample diagnosis. I always discuss with the growers before and after the diagnosis completed, and try to educate the clientele on disease diagnosis and management. The diagnostics benefit vegetable growers by providing growers effective management strategies, thus in turn bring significant saving for the growers.