

**Fairchild Tropical Botanic Garden
Professional Development**



**Annual Report
2010-2011**

INTRODUCTION

This year, 343 teachers attended Fairchild Tropical Botanic Garden's nine professional development workshops. Over the course of eight one-day workshops and one 10-day workshop, Fairchild's Professional Development program immerses teachers in the wonderful world of plants, their basic biology, how they adapt to their environment, why they are important in our lives, and how we can use the outdoors as a living laboratory and classroom.

All of FTBG's Professional Development workshops are taught through a combination of lecture, labs, outdoor instruction and hands on activities, with an emphasis on pedagogy and standards-based learning. Teachers receive a wealth of resources during the workshop including printed and plant material, curriculum ideas and lesson plans, laboratory specimens and activity samples, a compact disc of electronic resources, and other applicable materials for their classroom. Fairchild educators work with scientists and other experts in the community to present guest speakers, as well as to distribute current and locally relevant information in the form of handouts and resources.

Time for evaluation and reflection are built into each workshop. Teachers are asked to consider what they will most likely use in the classroom, how they will use it, if they will need to modify it, and what their next steps will be. Discussion and sharing of these ideas is facilitated. In addition to reflection, each teacher completes an evaluation form that rates aspects of the course including content, organization, and handouts, among other parameters.

Fairchild offers these workshops in conjunction with Miami-Dade County Public Schools. Workshop proposals are submitted to and pre-approved by MDCPS Curriculum and Instruction staff. Teachers receive TEC credits for attendance, upon completion of each workshop and submission of follow-up work. Workshop attendees include teachers of various disciplines from elementary, middle and high school levels. All workshops are also available to teachers from independent and private schools.

COURSE DESCRIPTIONS

During the 2010-2011 school year, the following workshops were taught through Fairchild's Professional Development program:

A. School Garden Workshop

This one day workshop is offered twice a year at the Garden, due to high interest and demand. During this workshop, teachers learn how to plan, implement, and maintain a school garden, as well as how to integrate garden activities into the curriculum. Basic horticulture techniques and design elements are taught through hands-on activities, while the theory and research supporting garden-based learning is emphasized through lecture and supporting documents. A large portion of the day is dedicated to hands-on, age-appropriate, and standards-based curriculum instruction, taking place both in the classroom and outdoors. This year, Devon Powell from FTBG's Conservation Department spoke about the Connect to Protect Network and how students and

teachers can play an important role in the conservation and restoration of native pine rockland habitats.

B. Environmental Action Workshop

Fairchild educators offered a one-day Environmental Action workshop for Fairchild Challenge pre-K-12 teachers. This workshop was designed to inspire and assist teachers in their efforts to engage their students in environmental projects that raise awareness and make a difference in the school, home and community. Workshop attendees not only received a thorough review of what is required for this Fairchild Challenge option, but they were also made aware of the resources available through Fairchild and the community. This workshop was designed so that teachers rotated through a series of four stations where they learned about water conservation, energy conservation, biodiversity monitoring, and use of rain barrels. Barbara McAdams from UF/IFAS, Agricultural Extension was invited to co-teach this workshop and contribute her particular expertise.

C. South Florida Plants and Ecosystems

This one-day workshop was offered for the third year, in response to teachers' requests for more information on the topic of native plants and ecosystems. Teachers were given an overview of the major ecosystems of South Florida through classroom materials, and then reinforced that knowledge by visiting examples of each habitat in the Garden. Traveling from a hardwood hammock, to a coastal mangrove area, and through a pine rockland, teachers participated in hands-on activities and explorations in each habitat, with the opportunity to make comparisons between different habitats. During the workshop, teachers became very familiar with several key plant species of South Florida. As with all workshops, an emphasis was placed on hands-on activities that can be incorporated into the classroom and aligned with state standards. Tiffany Melvin from the Miami Dade County's Environmentally Endangered Lands spoke about the County's effort to protect and restore native habitats.

D. Ethnobotany

For the third year, a one-day workshop in Ethnobotany was taught. During this workshop, teachers learned about the traditional uses of many South Florida and Caribbean plant species and then bridged that ancient knowledge with innovative ways to teach students in the classroom about the importance of plants in our lives today. Teachers also took an in-depth look at case studies in ethnobotany that examined issues of ethics in collection, conservation and plant harvesting. Teachers got an opportunity to study live plants in the Garden, and then got down and dirty and experiment with plant dyes, oils, and tinctures in the classroom laboratory. Kiki Mutis spoke of her travels with renowned ethnobotanist Mark Plotkin and the Amazon Conservation Team in the jungle of Surinam.

E. Basic Botany

This one-day workshop provided a general overview of plant anatomy and terminology. Participating teachers are provided with a small hand lens and are instructed to investigate leaves, flowers and fruits of plants. Often teachers find themselves amazed from seeing the ovules of an angel trumpet flower, to looking closely at the hundreds of small flower buds that make up a head of broccoli. An outdoor guided plant walk ties the larger structure of plants with the functions that each plant part serves, with a focus on adaptations to the environment.

F. Tropical Botany

Affectionately known as Botany Boot Camp, this 10-day workshop invites teachers to live, eat, and breathe tropical plants through guided walks, lectures and guest speakers, field trips, and more. In its 19th year of being taught at Fairchild, this course covers everything from plant anatomy, to secondary compounds, to propagation, to conservation, and more. The general consensus is that this is unlike any other MDCPS workshop - it is one of the hardest but by far most rewarding workshops ever. For the third year, the Latin American and Caribbean Center at Florida International University provided partial funding for this workshop.

Additional Professional Development

In addition to our regularly scheduled workshops, Fairchild educators are often asked to do special professional development initiatives.

Two School Garden workshops were taught for teachers from United Way schools across the county. Teachers learned about planning, designing, implementing and maintaining a garden through lecture, classroom activities and outdoor activities and planting demonstrations.

Fairchild educators attended a one day Flying Wild workshop. This workshop created the partnership that enables Fairchild to incorporate ornithology activities into their professional development, festival and children programs.

Additionally several speaking engagements were offered to various groups county-wide, on the topics of ethnobotany, organic gardening, pest management, composting, kids gardening activities, and other topics relevant to community garden initiatives.

EVALUATION AND FEEDBACK

Based on reflection, assessments and evaluations, we are able to gather feedback on all of our workshops from participating teachers. Results confirm that these workshops are of vital importance, in high demand, and held in high regard. Room for suggestions and improvement is welcomed and taken into consideration as we plan for future years.

The following responses were recorded from evaluation forms completed by teachers at the end of the workshop:

A. School Garden Workshop

Combined School Garden (n=38)	Excellent	Very Good	Good	Poor
Course Content	92%	8%	0%	0%
Course Organization	84%	16%	0%	0%
Course Materials	89%	11%	0%	0%
Hands on Activities	92%	5%	3%	0%
Relevance to your program needs	84%	16%	0%	0%
Average	88%	11%	1%	0%

Teacher feedback from the School Garden Workshop included the following comments:

I did enjoy the way so much information was disseminated in an informative, interactive, stimulating way. In addition the school workshop CD is invaluable with its additional resources in addition to today's work.

I now have a better understanding of how a school garden works and how creative you can be, and feel better equipped to go to school with relevant information to set-up, grow and sustain a garden in the campus.

This has been a wonderful learning experience. The presentation and resources provided will be an invaluable source of information and guidance.

I enjoyed the pine rockland corridor lecture, the planting activities, the introduction to composting, the activities given to us as well as the disk to be shared.

B. Environmental Action Workshop

Environmental Action (n=26)	Excellent	Very Good	Good	Satisfact.	Poor
Course Content	88%	8%	4%	0%	0%
Course Organization	92%	8%	0%	0%	0%
Course Materials	88%	4%	8%	0%	0%
Hands on Activities					
Energy	73%	12%	15%	0%	0%
Water	69%	19%	12%	0%	0%
Biodiversity	100%	0%	0%	0%	0%
Rain Barrel	56%	12%	24%	2%	0%
Relevance to your program needs	85%	8%	8%	0%	0%
Average	81%	9%	9%	1%	0%

Teacher feedback from the Environmental Action Workshop included the following comments:

I will begin to take my students outside more often when the weather permits and implement the biodiversity activity.

This workshop has changed my views. I will review preserving our precious environment, involving my community in our efforts to conserve.

I am now more prepared to raise awareness and enhance the science curriculum with my students and colleagues.

Everything that was presented made a positive impact on my teaching strategies that will be implemented in the class.

C. South Florida Plants and Ecosystems

South Florida Plants (n=22)	Excellent	Very Good	Good	Poor
Course Content	95%	5%	0%	0%
Course Organization	91%	9%	0%	0%
Course Materials	95%	5%	0%	0%
Hands on Activities	86%	14%	0%	0%
Relevance to your program needs	95%	5%	0%	0%
Average	93%	7%	0%	0%

Teacher feedback from the South Florida Plants and Ecosystems Workshop included the following comments:

I will use this information when I teach the unit on plants and ecology where I will focus on S. Fl plants and ecosystems. I will definitely like to make a plant collection with my students.

Our instructors were exceptionally friendly, knowledgeable and fun!!!

I have learned so much and I am now very excited about learning more about FL's wonderful plants. I plan on researching more so I can plant some of the butterfly attracting plants in my yard and possibly at my school. You have opened my eyes to the very exciting and interesting world of plants. I will pull on my knowledge and excitement to my students.

Thanks for all the hands-on activities. I am like my students who need that to learn. I will do the same when I teach about South Florida plants.

D. Ethnobotany

Ethnobotany (n=12)	Excellent	Very Good	Good	Poor
Course Content	100%	0%	0%	0%
Course Organization	100%	0%	0%	0%
Course Materials	92%	8%	0%	0%
Hands on Activities	100%	0%	0%	0%
Relevance to your program needs	92%	8%	0%	0%
Average	97%	3%	0%	0%

Teacher feedback from the Ethnobotany Workshop included the following comments:

I realize now how botany is connected and is important to every part of our lives.

Prior to the workshop I thought ethnobotany was only about native medicines. Now I know it's political, economic, language and encompasses a great umbrella of subjects.

The subject is so fascinating it could be more than a one day workshop/ - for instance part one and part two the following Saturday.

My experience was excellent. I feel that the workshop was complete and feel there is no need to change anything.

E. Basic Botany

Basic Botany (n=14)	Excellent	Very Good	Good	Poor
Course Content	86%	14%	0%	0%
Course Organization	93%	7%	0%	0%
Course Materials	93%	7%	0%	0%
Amt of info and skills obtained	93%	0%	7%	0%
Overall delivery of instructor	86%	7%	7%	0%
Average	90%	7%	3%	0%

Teacher feedback from the Basic Botany Workshop included the following comments:

Now I have a much broader understanding of the plant kingdom and plants in general.

This was an awesome experience with many activities that I will use in my class room.

I enjoyed using the microscopes and creating our own slides. The discussion about the fruits/veggies was extremely informative. I also loved the scavenger hunt.

F. Tropical Botany

Upon completion of this course, teachers are asked to complete a comprehensive evaluation form. Items addressed include the quality of course handouts and texts, activities, lectures and presentations, as well as the quality and competence of the instructor, guest speakers, and Fairchild staff. A select sampling of topics was rated as follows:

Tropical Botany (n=17)	Excellent	Very Good	Good	Satisfact.	Poor
Course Study Guide	88%	12%	0%	0%	0%
Activities	90%	10%	0%	0%	0%
Content presentation	94%	6%	0%	0%	0%
Amt of info and skills obtained	88%	6%	6%	0%	0%
Overall delivery of instructor	94%	6%	0%	0%	0%
Average	91%	8%	1%	0%	0%

Teacher feedback from the Tropical Botany Workshop included the following comments:

The course facilitated a lot of learning for me, and has inspired me to immerse myself more into the South Florida agricultural/ horticultural scenes.

The best of the best! I'm honored to be a part of a wonderful life changing experience. A mentor at its best!

The most enjoyable thing about the workshop was the combination of lecture and hands-on activities. Invaluable! The course design is state of the art!

Summary

Through our Professional Development program, we have the ability to reach potentially many thousands of students with information and resources related to the importance of plants and their conservation. As environmental issues continue to increase, and as the gap between children and nature continues to grow wider and wider, and as science standards continue to fall short in our schools, our future depends on educating the younger generations to care and conserve. By educating the educators, we create a trickle down effect, and further our mission to celebrate nature, cultivate minds, and inspire action.