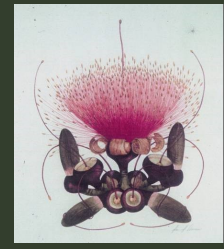


# Gifford Arboretum Newsletter

Spring 2016

Volume 11, Issue 2



## Dr. Helene Muller-Landau, 2016 Gifford Arboretum Lecturer

It is our great honor and pleasure to welcome this year's John C. Gifford Arboretum Lecturer: Dr. Helene C. Muller-Landau. She is a Staff Scientist at the Smithsonian Tropical Research Institute located in Panama, where she has been working since 2008 as the Lead Scientist for the Center for Tropical Forest Science's Global Forest Carbon Research Initiative. In addition, she serves as an Adjunct Professor in the Department of Ecology, Evolution and Behavior at the University of Minnesota.

Dr. Muller-Landau received her B.A. in Mathematics and Statistics, with a concentration in Environmental Studies, from Swarthmore College in 1995. She then earned her M.A. and Ph.D degrees in Ecology and Evolutionary Biology at Princeton University, in 1997 and 2001 respectively. She was a Post-doctoral Researcher at Princeton University in 2001 and at the National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara from 2002 to 2003. She also worked as a Research Associate at Princeton University in 2004, and then became an Assistant Professor at the University of Minnesota from 2004 to 2008.

She has authored and coauthored an impressive number of scientific papers that have been published in premier journals such as *Nature*, *Science*, *Trends in Ecology and Evolution*, *Ecology Letters*, and *Proceedings of the National Academy of Sciences*, among others, as well as various book chapters. Part of her scientific work includes being a reviewer for many different institutions, including the National Science Foundation (NSF, USA), DOE National Institute for Climatic Change Research (NICCR, USA), and the MacArthur Foundation.

With 25 years of research on forest dynamics, the Global Carbon Research Initiative has been analyzing field data from various sites on the growth and mortality of more than four million trees consisting of approximately 8,500 different species. Dr. Muller-Landau utilizes this data in her current research, and her John C. Gifford Arboretum Lecture focuses on how tropical forests play a large role in the global carbon cycle. Because tropical trees store and cycle large quantities of carbon, earth system models that project future global climates under different policy scenarios necessarily need to include models of tropical forest ecosystems and how they respond to global change. Increasing atmospheric tropical carbon dioxide and climate change have the

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potential to greatly alter tropical forest structure, species composition, and carbon stores. Any changes to tropical forests would in turn be expected to feedback on global carbon budgets and climate. Indeed, uncertainty about tropical forest responses to global change is currently one of the largest sources of uncertainty in future climate projections, and reducing this uncertainty is a major area of research. Dr. Muller-Landau will present some recent findings on how tropical forests are changing, and the challenges in quantifying these changes. She will also discuss how earth system models represent tropical forests, and how she and her colleagues are working to improve these models to better capture tropical forest responses to global change.

*“Tropical tree species differ widely in their traits and strategies, reflecting tradeoffs: different species do better under different circumstances in time and space. This makes forests simultaneously robust and fragile: under almost any change of conditions, some species will probably do okay, but some will probably not, and could be lost.” - Helene Muller-Landau*

Her 2016 John C. Gifford Arboretum Lecture is entitled *“Tropical Forest Responses to Global Change”* and it will be presented on Thursday April 7<sup>th</sup>, 2016 at 7:00 pm, in Cox Science Center, Room 126. This promises to be an important lecture on a timely topic that concerns all of us; come learn more about the latest research that is being conducted in this field.

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## **Thank You to the Gifford Arboretum**

The University of Miami, through its Office of Sustainability, would like to thank the John C. Gifford Arboretum for the crucial role it has played in achieving our Tree Campus USA recognition. For the second year in a row, the Arbor Day Foundation decided to recognize UM for its environmental education programs and the Coral Gables campus' landscape and canopy. The Arboretum is a unique part of that landscape and this recognition could not have been possible without the hard work and excellent educational programs arranged by the Gifford's Director, Steve Pearson. The Arboretum is a botanical jewel for students, staff and faculty to enjoy, and it has helped provide an outdoor classroom for students who want to learn the basics of tree care. Our campus' landscape is one of the most beautiful anywhere!

**Teddy Lhoutellier**

**Green U** - Sustainability Manager - University of Miami



## Director's Message

This has been an interesting time at the Arboretum, with the hottest, wettest fall and winter ever experienced in South Florida. However, the trees and shrubs have generally 'weathered' this odd time extremely well and it has been exciting to see our *Saraca cauliflora* and *Brownea coccinea* subsp. *capitella* bloom for the first time. We also have witnessed specially prolific blooming of our *Saraca indica*, *Cassia bakeriana*, *Butea monosperma*, and *Erythrina speciosa* trees, as well as the first good bloom of our *Erblichia odorata*.

Unfortunately, rain poured on our picnic on **December 5, 2015**. This was specially sad since we had two of the world's leading palm authorities, **Dr. Larry Noblick** of Montgomery Botanical Center and **Dr. Scott Zona** of Florida International University, on hand to lead tours of the Arboretum's palms as well as the Palmetum. While only a very small crowd braved the downpour for the tour of the Arboretum's palms in the morning, a larger group enjoyed the Palmetum tour after lunch, when the rain had let up to a more bearable drizzle. However, our turnout was a 'grin and bear it' group, and I was pleasantly surprised by how many guests later reported how much they had enjoyed the event. The picnic was moved into the breezeway of the Physics Building, where we enjoyed a delicious lunch in cozy, dry quarters.

I am very pleased to announce that, thanks to a grant from the International Palm Society, we added identification signs and created a plot map and brochure for UM's Palmetum during 2015. Featuring over 380 palms, this collection had been neglected and most of the original signs had been lost. We are currently working on a final edition of the brochure and signs for a few palms that had not yet been identified at the time of our Picnic. This work greatly increases the educational value of the Palmetum, and I want to specially thank Aldridge Arboretum Curators **Luis Vargas** and **Wyatt Sharber**, as well as **Scott Zona**, **Lenny Goldstein** and **Larry Noblick** for their significant contributions to this work. On a sadder note, I regret to inform you that **DeArmand Hull** died in Hawaii on February 12, 2016. De was the person who designed and managed the original planting of the Palmetum in 1999.

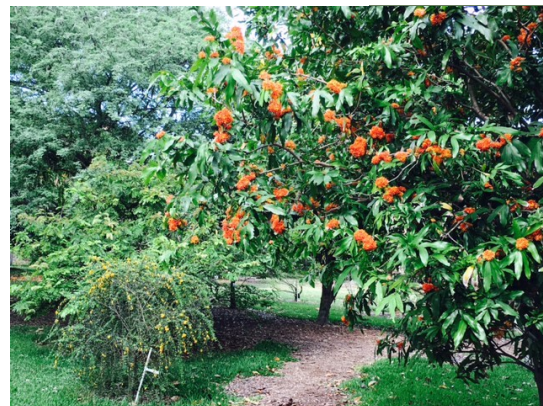
We have had a great spring semester of programs and musical events. First, on **February 3rd**, **Leonard Goldstein**, the President of the South Florida Palm Society and a member of the Gifford Arboretum Advisory Committee, continued our focus on palms with an excellent program on palm identification and horticulture. Lenny conveyed lots of interesting information that evening, and there was something for everyone from palm novices to experienced horticultural experts. Most of the photos he used that evening were taken in the Arboretum and Palmetum.



Big City Folk Band

We have also enjoyed two excellent musical performances during the spring semester. First, on **February 17**, the **Big City Folk Band** performed a set in the Arboretum that ranged from foot-stomping Americana to heart-felt ballads. They are an excellent group whose authentic, no gimmick sound was appreciated by all who attended.

Then, on **March 16**, we were pleased to hear **Jesse Klirfeld's Jazz Combo** play in the Arboretum. This was another talented group who performed a highly enjoyable set of jazz music, led by its leader's excellent trumpet playing. This was also a special occasion as we enjoyed a surprise celebration of Lenny Goldstein's 70th birthday with a delicious chocolate cake.



*Saraca indica* in bloom

On **March 2nd**, we enjoyed a very interesting presentation by **Dr. Jeff Block** on Medical Marijuana. A graduate of the University of Miami Medical School and former President of its alumni association, Dr. Block is also a plant lover and has developed horticultural expertise in how to provide optimum growing conditions for various plants. He is Director of the Block Botanical Garden, and I urge you to visit this beautiful garden. Jeff has been interested in botanical medicine for a long time, and he has developed particular expertise on the therapeutic value of medical marijuana. Although Dr. Block maintained scientific neutrality throughout his presentation, it was clear to those who attended that marijuana does have therapeutic value in treating some medical problems. This information was timely given that the issue of medical marijuana will soon be before Florida voters.



## More Great Events Coming During the Spring Semester:

**April 13, 2016 at 6 PM** - Music in the Arboretum with the Zach Zebley Trio, a rock/fusion group. This performance is a week earlier than usual to accommodate a joint Earth Week/Arbor Day celebration. Refreshments will be served.

**May 4, 2016 at 7 PM** - UM Associate Professor Kathleen Sullivan Sealey will present "Island Coasts and Plants: Coastal Ecology and Restoration in the Bahamas." Dr. Sealey is a dynamic scientist who understands that it is a scientist's role to not only expand knowledge, but to also use that knowledge to influence positive changes in policy. She had done important work to implement policies, regulations and incentives to improve environmental stewardship in the Bahamas, and this will be an opportunity to gain insight into that work as well as how some of it could be positively employed in Florida. This event will take place in Cox Science Center Room 166. Additions to the refreshment and plant raffle table are always welcome, but not required.

**All Gifford Arboretum events are free and open to the public. Free parking for the events is available in the Purple Lot at the south end of the Arboretum.**



**SPECIAL THANKS ARE EXTENDED TO MONTGOMERY BOTANICAL CENTER FOR ITS ONGOING CO-SPONSORSHIP OF THE ANNUAL GIFFORD LECTURE**

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### Memorial Planting for Craig Kolthoff

On February 12, 2016, a Mexican Grass Tree (*Dasyllirion longissimum*) was planted in memory of Craig Kolthoff in the What is a Tree? Exhibit. Craig was a kind and gentle soul who loved plants and the Arboretum. He also was a long time UM employee who worked in the Computer Science Department. His passion was to travel, and he had accompanied Chris Rollins and others on far flung journeys to Southeast Asia to view tropical forests and cultural sites, as well as to sample exotic tropical fruit. He had also traveled with the Tropical Flowering Tree Society, and he was a member of that group as well as the Rare Fruit Council, the Tropical Fern and Exotic Plant Society, and likely some other horticultural groups. Craig succumbed to cancer in February 2015, and he is missed by his friends.



Mike Johnston, Frank Janeczek, Marta Garcia & Julie Garcia

### Palm Planting in Honor of Stanley Kiem



Steve Pearson, Stanley Kiem, and Leonard Goldstein, President of the South Florida Palm Society

On February 27, 2016, the South Florida Palm Society visited the Arboretum to honor Stanley Kiem, who was one of the founding members of the International Palm Society and a member of the SFPS's first board of directors. He also provided valuable assistance to the SFPS with its multi-year palm planting project at Zoo Miami. After studying botany at UM, Stanley worked as superintendent of horticulture at Fairchild Garden for over 25 years. Very fittingly, Stanley was honored with the planting of a *Coccothrinax* sp. 'azul', a rare palm from Cuba that was only



*Coccothrinax* sp. 'azul'

recently introduced to the US. Although not yet been positively identified, it is a striking palm for the pattern of tight webbing surrounding the trunk (a characteristic of many species in this genus) and for the blue-green hue of its palmate leaves.



2016 Plant of the Year – *Mosiera longipes* (Myrtaceae)  
(Longstalked Stopper)

Available for distribution Spring 2016



Figure 1: *M. longipes* Flowers  
Photo credit: Roger L. Hammer



Figure 2: Fruits of *M. longipes*  
Photo credit: Dr. Frank Ridgley,  
ZooMiami



A. Cassius Blue  
B. Gray Hairstreak  
C. Red-banded Hairstreak  
D. Phaon Crescent

Description



Source of image: <http://plants.usda.gov>

Longstalked Stopper is an attractive, small shrub that will enhance any yard. With glossy, rounded leaves, gray bark, and delicate white flowers that look like a 4<sup>th</sup> of July celebration (Figure 1), it is an elegant and lovely plant.

By adding this underutilized native to your yard or patio, you will be helping the many songbirds that eat its purplish black fruit (Figure 2), the butterflies that relish its nectar, and, most importantly, the honeybees and other native Florida bees that spread its pollen.

It does best in full sun, but will tolerate medium shade. It is native to pine rocklands and rockland hammocks where it can grow to 6 feet tall. It is almost always broader than tall, and has a moderate rate of growth. It prefers moist, limestone soils, so a layer of mulch around your plant is recommended. Although it is fairly drought tolerant, it does not tolerate salt water or salt wind.

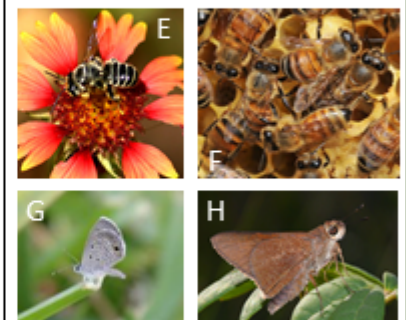
*Psidium longipes* is a synonym.

Some Fauna that  
Use *M. longipes*



Birds:

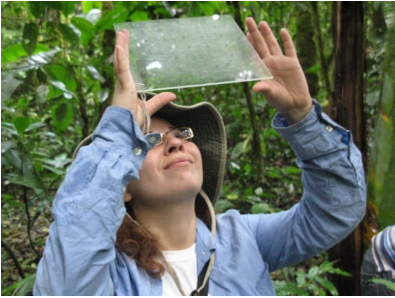
- A. Blue Headed Vireo (B. Small)
- B. Brown Thrasher (Jack Rogers)
- C. Northern Cardinal (J. Rogers)
- D. Gray Catbird (B. Small)
- E. Palm Warbler (G. Bartley)
- F. White-eyed Vireo (G. Bailey)
- G. Great Crested Flycatcher (J. Rogers)
- H. Northern Mockingbird (J. Rogers)



- E. Florida Native Bees
- F. European Honeybees
- G. Ceraunus Blue
- H. Monk Skipper

## Andrea Westerband, Ph.D. Candidate

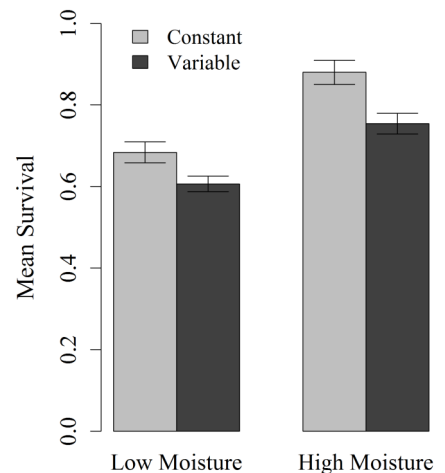
Department of Biology, University of Miami



Andrea Westerband is a doctoral student at the Department of Biology, University of Miami. She is also a plant ecologist who is primarily interested in the mechanisms that allow plants to utilize resources across a lifetime. She was raised in Puerto Rico and New York, and then obtained a Bachelor's Degree in 2010 at the State University of New York, College of Environmental Science and Forestry, in Syracuse, New York. She then joined Dr. Carol Horvitz's Lab at the University of Miami in 2010 to begin her graduate program towards obtaining a Ph.D. degree in Biology.

Her current research focuses on tropical herbaceous plants, particularly members of the *Heliconia* and *Calathea* genera. These fast growing herbaceous plants are widespread in the Costa Rican forest understory, where she has been combining field studies and shadehouse experiments at the Las Cruces Biological Station. Using mathematical population models, her goal has been to investigate how morphological and physiological adaptations that increase a plant's ability to capture resources interact among themselves and influence fitness, all within a changing forest environment.

Part of her research involved a two-year shadehouse experiment, where she measured growth, survival, and leaf lifespan, among other factors, in *Heliconia tortuosa* and *Calathea* sp. to determine whether these traits were positively influenced by different environmental factors, including variability in light, and soil moisture. She found that when moisture was low, plants in a variable light environment had greater growth than those in a constant light environment. Conversely, when moisture was high, a constant light environment increased growth. In turn, survival decreased in a variable light environment relative to a constant light environment, and this effect was more striking when there was high moisture (see figure). Leaf lifespan was unaffected by the treatments. Thus, although these species inhabit highly heterogeneous and variable light environments, she found that environmental variability does not always positively influence demographic and functional traits. In fact, environmental variability may be stressful, especially for plants that have low plasticity to acclimate to these variable conditions.



**Figure 1.** Andrea's research shows that for rainforest plants, how well they survive depends on how much moisture they have and whether the amount of light they get stays constant or varies over time.

*"Tropical rainforests are dynamic environments. Above the tree canopy light is abundant, but for plants living on the forest floor, light severely limits growth, survival, and reproduction. Light is therefore a crucial resource to study, if you want to understand the drivers of population dynamics."* - Andrea Westerband

Andrea has been a valuable and active graduate student in the Department of Biology. For example, she has served in the Committee for the Distinguished Visiting Professor program; was an organizer of the Friday Seminar series; and, as Teaching Assistant of the Ecology Laboratory, she created new course materials, trained numerous students in the field, and taught them scientific writing skills. Her service also extends outside UM, including having been a Graduate Student Mentor of the NSF funded 'Science Made Sensible Program'; and educator of the Girl Scouts for the America Badge Day through outdoor exercises in botany; and an educator of Fairchild Tropical Botanic Garden's Annual Fairchild Challenge.

She aims to complete her PhD in May, 2016 and then pursue a research career in plant ecology. Due to her sharp mind, hardworking attitude, and academic dedication, we know she will succeed in her professional goals and we wish her all the best.

# Thank you to our Supporters!

The Gifford Arboretum has been blessed with several very significant donations recently. Two of these were from the estates of dear friends: Kathy Gaubatz and Loyd Kelly. Most of you know Kathy as the person who led the charge to save the Arboretum when it was threatened with being turned into a parking lot during the 1980's, and she was again significantly involved when this threat reared its ugly head again about 8 years ago. Kathy was the Lorax of the Arboretum because she spoke up for the trees and she inspired many others to do so as well. She was a great person and I was blessed to work with her closely on several endeavors, including the Royal Poinciana Fiesta.

Loyd Kelly was never directly involved with the Arboretum. However, he was a former President of Fairchild Tropical Garden and I became friends with him when I initially served on the Fairchild Board during the early 1990's. Although Loyd didn't agree with some of the changes at Fairchild and left the board, we continued our friendship and, over the years, Loyd supported many of the projects that I was involved in. He also became a major benefactor and served as President of the Montgomery Botanical Center, and his legacy lives on today in that great institution. He was a quiet and gentle man, but he had the spirit of a lion. Loyd Kelly continues to inspire me every time I think of him, and I am very proud to be continuing his work by serving on the board of the Montgomery Botanical Center today.

Finally, I want to thank Leonard Abess for his recent support of the Arboretum. Leonard has been a major benefactor of the University of Miami for many years, and he has also served as President of its Board of Trustees. But Leonard is also a plant lover, particularly palms, and I was fortunate to be able to get to know him in conjunction with my service at Fairchild. Leonard loves UM and the Arboretum, and I am grateful to have his support as we strive to continually make the Arboretum better.

But, EVERY DONATION to the Arboretum is significant and appreciated, and I am very pleased to acknowledge and publicly thank all of the following recent donors. If I have inadvertently missed anyone, please accept my sincere apology. Everyone who helps is making a difference!

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The International Palm Society

United Way of Miami-Dade County

Carol J. White

The following recent donations of plants and materials are also recognized and much appreciated:

Fairchild Tropical Botanic

Garden

Freund's Flowering Tree

Nursery

Louise Garavaglia

Leonard Goldstein

David Janos

Montgomery Botanical Center

Craig Morell

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Redland Nursery

Silent Native Nursery

South Florida Palm Society

The Kampong of the NTBG

Scott Zona

## Please Donate to the Gifford Arboretum

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**Website:** <http://www.bio.miami.edu/arboretum>

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- Please keep me informed of activities at the Gifford Arboretum.
- Please find enclosed my tax-deductible donation to the University of Miami-Gifford Arboretum. (Tax deduction excludes value of benefits)
- Please send me information about including the University of Miami in my estate plans.

### Membership levels (annual)

- Student friends \$5  
 Friends \$25  
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newsletter and discounts  
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all above plus display on plaque

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by credit card: Amount \$ \_\_\_\_\_

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Through tax and estate planning techniques and incentives, planned gifts allow you to meet your personal financial objectives while ensuring the future of the Gifford Arboretum. Planned giving options include bequests, trusts, and charitable gift annuities.

### PLAN YOUR GIFT

To learn more about planned giving opportunities that can benefit you and the Arboretum, contact Kyle Paige, JD '89, director of estate planning and giving, at [kpaige@miami.edu](mailto:kpaige@miami.edu) or 305-284-1527.

Please make a gift to the Gifford and/or include Gifford Arboretum in your estate plans to help support the ongoing work of caring for the trees and to enable the Arboretum to remain a central feature of the UM campus for generations to come.

# HELP US GROW

