

SCIENTIFIC FIELD TRIPS

All field trips depart from and return to the Hilton. Participants should gather in the lobby. In all cases, dress should be suitable for outdoor activities and short hikes in weather that will be hot or rainy or both. Bring any personal gear you might require to enjoy the trip. Many of the sites described are designated natural areas or are proposed as such. Collecting plants in these areas is prohibited or severely restricted. It is best to leave the plants where you find them, taking away only notes, pictures, and memories.

Fifteen field trips are scheduled before, during, and after the scientific program. Field trip fees include transportation as well as admissions, guides, lunches, and beverages where indicated.

Please read the Refund and Cancellation Policy. Scientific field trips are ticketed events; tickets will be included in the registration packet. If you participate in a field trip before acquiring your registration packet, bring your registration confirmation notice so that you have a record of your purchased ticket. A limited number of tickets may be available for purchase at the Registration Desk on-site at the meeting, but availability is not guaranteed.



Leaving for field trips - Botany 2004

Pre-Conference Trips

Saturday, August 13

FT-1 8:00 am – 4:00 pm B&B - Botany and Barbeque – Palmetto State Park..... \$40.00

Sunday, August 14

FT-2 8:00 am – 12:00 pm Useful Wild Plants of McKinney Falls State Park \$40.00

FT-3 8:00 am – 4:00 pm B & V - Botany and Vino – Pedernales Falls State Park and Becker Vineyards \$64.00

FT-4 9:00 am – 4:00 pm Central Texas Spring-Fed Rivers: From Lindheimer's Paradise to Endangered Species \$75.00

FT-5 8:00 am – 4:00 pm Blanco River Botany – Central Texas limestone endemics \$120.00

FT-6 8:00 am – 4:00 pm Balcones Canyonlands Limestone Grotto and Canyon Flora: Hamilton Pool and West Cave \$72.00

FT-7 8:00 am – 5:00 pm Early Tertiary Floras of Central Texas \$80.00

FT-8 7:00 am – 5:00 pm Ferns of the Central Texas Area..... \$85.00

FT-9 7:30 am – 5:00 pm Bryophytes and Lichens of the Texas Hill Country \$75.00

FT-10 6:30 am – 8:00 pm Jewel of the Post Oak Belt: Bogs and Xeric Sands of the Gus Engeling WMA \$120.00

Morning Trips

Monday, August 15

FT-11 8:00 am – 12:00 pm Wild Basin Wilderness Preserve \$30.00

Tuesday, August 16

FT-12 8:00 am – 12:00 pm Lady Bird Johnson Wildflower Center: Plant Conservation, Landscape Restoration, and Information Networking \$30.00

Wednesday, August 17

FT-13 8:00 am – 12:00 pm A Brief Introduction to the Balcones Escarpment Flora: Balcones Canyonland Preserve \$45.00

Post-Conference Trips

Thursday - Saturday, August 18 - 20; 3 days - 2 nights

FT-14 Leave 7:00 am Thursday - return early evening Saturday Big Bend National Park \$300.00

FT-15 Leave 7:00 am Thursday - return early evening Saturday Texas Subtropics: "The Valley" \$300.00

Pre-Conference Trips

Saturday, August 13

**FT-1 B & B - Botany and Barbeque
Palmetto State Park, Gonzales, and the
Kreuz Market \$40.00**

Saturday, August 13
Time: 8:00 am – 4:00 pm

Trip Leader: Mark W. Bierner, The University of Texas,
bierner@mail.utexas.edu

Limit: 30
Lunch Included

Palmetto State Park, named for the dwarf palmetto (*Sabal minor*) found in its swamps, is an unusual botanical area that resembles the tropics more than Central Texas. It is a 270-acre riparian refuge located where the ranges of eastern and western species merge, resulting in very diverse local flora and fauna. Gonzales, established in 1825, was the farthest west Anglo settlement until the close of the Texas Revolution. In 1831, the Mexican government sent six-pound cannon to Gonzales as protection against the Indians. This cannon was used in the “Come and Take It” Battle on October 2, 1835, when the first shot of the Texas Revolution was fired. A few months after the first shot, men and boys from the region gathered in Gonzales and sent the only reinforcements ever received at the Alamo.



In a state known for outstanding barbeque, few places can surpass Kreuz Market, located in Lockhart. For lunch you will enjoy beef brisket, pork chops, sausage,

and (or) ribs served on elegant sheets of butcher paper. Water will be provided for the Palmetto State Park visit. You should bring a pack, sunscreen and insect repellent, and wear comfortable walking shoes, a hat, and sunglasses. Birders might want to bring binoculars, and don't forget your camera.

El Marko Note: You might need a brewski or twoski to “warsh that BBQ on down” and a lot of soap and water when you're done to “rinch your hands.”



Sunday, August 14

**FT-2 Useful Wild Plants of McKinney Falls
State Park \$40.00**

Sunday, August 14
Time: 8:00 am – 12:00 noon

Trip Leaders: Scooter Cheatham and Lynn Marshall, Useful Wild Plants, Inc., info@usefulwildplants.org

Limit: 20
Lunch: Not included

The Useful Wild Plants (UWP) Project sets a standard for studying plant uses throughout the world. The multi-volume work titled The Useful Wild Plants of Texas, the Southeastern and Southwestern United States, the Southern Plains, and Northern Mexico is the definitive economic botany study for the southern half of the United States and northern Mexico. More than three decades of intensive interdisciplinary research have gone into the project, and nothing comparable has been done elsewhere. The first goal of the project is to complete and publish a comprehensive 12-volume encyclopedia that describes more than 4,000 Texas plants, discusses in detail their past, present, and future value, and provides color photographs and distribution maps for each species.

McKinney Falls State Park, with its miles of hiking trails and variety of habitats, provides an ideal setting for a Useful Wild Plants trek. A brief walk toward the falls opens up to an expansive floor of limestone and volcanic rock dating back some 80 million years.

Large trees in this area include Bald Cypress (*Taxodium distichum*), Pecan (*Carya illinoensis*), Arizona Walnut (*Juglans major*), and Soapberry (*Sapindus saponaria*). Along the trail are rock shelters that were once used by Native Americans. Remains of less primitive living are down the trail, where parts of the Thomas McKinney homestead and Grist Mill still stand.

Water will be provided. You should bring a pack, sunscreen and insect repellent, and wear comfortable walking/hiking shoes, a hat, and sunglasses. Birders might want to bring binoculars, and don't forget your camera.

Sunday, August 14

FT-3 B & V - Botany and Vino Pedernales Falls State Park and Becker Vineyards \$64.00

Sunday, August 14
Time: 8:00 am – 4:00 pm

Trip Leader: Mark W. Bierner, The University of Texas, bierner@mail.utexas.edu

Limit: 30
Lunch Included

The Pedernales River is the focal point of the park, but trails pass through upland areas with oak (*Quercus buckleyi* and *Quercus fusiformis*) and juniper (*Juniperus ashei*) woodlands and lowland drainage areas heavily wooded with pecan (*Carya illinoensis*), elm (*Ulmus crassifolia*), sycamore (*Platanus occidentalis*), walnut (*Juglans microcarpa*), and hackberry (*Celtis laevigata*). Ash (*Fraxinus texensis*), buttonbush (*Cephalanthus occidentalis*), and bald cypress (*Taxodium distichum*) grow on the terraces adjacent to the river. The park is home to the endangered Golden-cheeked Warbler (*Dendroica chrysoparia*) from March through July and the indigenous Rufous-crowned Sparrow (*Aimophila ruficeps*) year-round. Becker Vineyards was established in 1992 on a site of native Mustang grapes (*Vitis mustangensis*). Forty-six acres of French vines with sixteen different varietals were planted in a mixture of deep sand and are watered with water welled from limestone formations 300 feet beneath the surface. The winery, located in a 19th century German stone barn reproduction and surrounded by grazing quarter horses, peach orchards, and fields of native wildflowers and lavender, is 10,040 square feet with a storage capacity of 64,000 gallons and fermenting capacity of 35,000 gallons.

In addition to tours and wine tasting, we will enjoy a box lunch picnic on the grounds of the vineyard. Water will be provided for the Pedernales Falls State Park visit. You should bring a pack, sunscreen and insect repellent, and wear comfortable walking shoes, a hat, and sunglasses. Birders might want to bring binoculars, and don't forget your camera.



El Marko Note: The Claret at Becker Vineyards “drinks on down real good.”



FT-4 Central Texas Spring-Fed Rivers: From Lindheimer's Paradise to Endangered Species..... \$75.00

Sunday, August 14
Time: 9:00 am – 4:00 pm

Trip Leader: Jackie M. Poole, Texas Parks & Wildlife Dept., Jackie.Poole@tpwd.state.tx.us

Limit: 20
Lunch Not Included

Large spring-fed rivers between Austin and San Antonio are important to Texas botany: the "Father of Texas botany", Ferdinand Lindheimer, lived on the banks of one (the Guadalupe River at New Braunfels), and the very rare Texas wild rice (*Zizania texana*) continues to hold on in another (the Comal River, at San Marcos). They are also a great place to cool off on a Texas summer afternoon.



This field trip, led by Texas Parks & Wildlife Dept. rare plant botanist Jackie Poole, will first go to New Braunfels to visit the Lindheimer Home, where Lindheimer lived for decades in the 1800s while botanizing and publishing the local German-language newspaper. Then, following an early lunch, the group will proceed to the San Marcos River to "tube" the uppermost part just below the springs. ("Tubing" is floating down the river in inner tubes, in swimming suits.) You'll get to see *Zizania texana* and other aquatics while Jackie explains the ecology and multiple conservation problems of aquifer-fed aquatic ecosystems in central Texas and the specific problems of the Texas wild rice.

Bring swimming suits or shorts, T-shirt, and (extra) shoes you can get wet and dirty for tubing (these are necessary!), and sun protection (sunscreen, hat, and/or wet-able shirt etc.); rustic clothes-changing facilities are available at tube-rental. Water will be provided.



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FT-5 Blanco River Botany – Central Texas limestone endemics \$120.00

Sunday, August 14
Time: 8:00 am – 4:00 pm

Trip Leader: Bill Carr, The Nature Conservancy of Texas, bcarr@tnc.org

Limit: 10
Lunch on your own

Nature Conservancy botanist Bill Carr will lead a small group onto the private Halifax Ranch along the Blanco River in Blanco County. This 3300-acre ranch is home to about 400 plant taxa, including 17 Texas endemics, 1 globally-rare (G2) shrub, 6 quasi-rare (G3) taxa), and at least 10 oddball disjuncts / regional rarities. The area includes typical upland Edwards Plateau vegetation on limestone, but of especial interest are the lovely canyons along and near the Blanco River. Major habitats include mesic limestone canyons, xeric south-facing cliff faces, spring / seep zones, and sandy river terraces / gravel bars maintained by a major flood-prone stream.

The hike will not be strenuous and will be mostly in the morning, but heat can nonetheless be intense, so hats, sunscreen, and a small daypack to carry water (provided) will be needed. Footwear appropriate for rough, rocky terrain should be worn, but walking shorts will be OK. There will be the opportunity to cool off in the river near the end of the walk for those so inclined. Lunch will follow at a typical Texas barbecue restaurant (vegetarian available) before returning to Austin mid-afternoon.

FT-6 Balcones Canyonlands Limestone Grotto and Canyon Flora: Hamilton Pool and West Cave \$72.00

Sunday, August 14
Time: 8:00 am – 4:00 pm

Trip Leader: Mark Mayfield, Kansas State University, markherb@ksu.edu

Limit: 25
Lunch Included

The dissected eastern and southern edges of the limestone Edwards Plateau are known as the Balcones Canyonlands. The canyons of this area harbor a fascinating combination of endemic, disjunct, and widespread species that add to the already unique Edwards Plateau flora of surrounding uplands. In some areas, perennial springs give rise to streams that plunge over limestone cliffs into beautiful mesic “grottos” with plunge pools and narrow canyons downstream. This tour will visit two such areas in far western Travis County near the Pedernales River. After a stop along a beautiful section of the Pedernales River, the group will take a tour of the canyon woodland and grotto of the small West Cave Preserve. The rest of the day will be spent at the larger Hamilton Pool county park, which includes a very large plunge pool (a favorite local

swimming hole—participants so inclined are welcome to take advantage of it) and a perennial stream in a wooded canyon with a good trail that runs nearly a mile down to the river. Relatively easy walking. Birding can be good here. Participants should bring hats, sunscreen, small day-packs to carry water (which will be provided), and sturdy walking shoes

FT-7 Early Tertiary Floras of Central Texas \$80.00

Sunday, August 14
Time: 8:00 am – 5:00 pm

Trip Leader: Gary Upchurch, Texas State University, San Marcos, gu01@txstate.edu

Limit: 20
Lunch Included

The Early Tertiary (Paleocene–Eocene) had the warmest temperatures of the past 65 million years. During the Early Tertiary tropical and paratropical forests were widespread in the southeastern US. These forests showed a diversity of taxa typical of modern tropical and subtropical floras, such as Lauraceae, woody Fabaceae, and Arecaceae, intermixed with elements typical of modern temperate floras, such as Fagaceae. Early Tertiary floras from the southeastern US have been and continue to be the subject of much research on leaf systematics and paleoclimate. Leaf megafossils from some localities are noteworthy for their preservation cuticular anatomy and epiphyllous fungi.



We will collect leaf megafossils from one or more localities in the Wilcox Group of central Texas to sample the diversity of these forests. Participants should bring a rock hammer, backpack, and other collecting gear, and are urged to wear jeans, boots, sunscreen, insect repellent, and a hat. Newspaper, tissue, acrylic plastic spray, boxes, and drinking water will be provided. Participants should come prepared for high temperatures, bright sun, and possible encounters with snakes and insects.

FT-8 Ferns of the Central Texas Area \$85.00

Sunday, August 14
Time: 7 am – 5:00 pm

Trip Leaders: Jim Blassingame, South Plains College; Jack Stanford, Howard Payne College; Laura Sánchez, Natural Resources, Fort Hood, Laura.L.Sanchez@us.army.mil

Limit: 25
Lunch Included

We will visit two sites representing two different ecoregions in the central Texas area. Our first stop will be Inks Lake State Park, in the Llano Uplift region. This is an area of pink granite

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outcroppings with a unique flora. Some species that we will see here include *Astrolepis sinuata*, *Cheilanthes lindheimeri*, *Cheilanthes tomentosa*, *Pellaea ovata*, *Pellaea wrightiana*, *Isoetes lithophila*, *Isoetes melanopoda*, *Selaginella arenicola*, *Selaginella peruviana*, and *Woodsia obtusa*. After lunch we will go on a tour of West Cave Preserve, which is in the Canyonlands of the Edwards Plateau. At West Cave, we will visit a sheltered limestone canyon that has a 40 foot waterfall. Some species that we will see here include *Adiantum capillus-veneris*, *Anemia mexicana*, *Argyrocosma dealbata*, *Cheilanthes alabamensis*, and *Thelypteris ovata*. You will need to wear sturdy shoes and bring a hat, sunscreen, and insect repellent, and a small day pack to carry water, which will be provided.

FT-9 Bryophytes and Lichens of the Texas Hill Country \$75.00

Sunday, August 14
Time: 7:30 am – 5:00 pm

Trip Leaders: Ann Rushing, Baylor University, Ann_Rushing@baylor.edu, and Bob Egan, University of Nebraska at Omaha.

Limit: 25
Lunch Included

On this full day field trip, sponsored by the American Bryological and Lichenological Society, we will travel by bus to various localities near Austin representative of central Texas habitats, including Bastrop State Park and Hamilton Pool County Park. Bryophytes and lichens will both be observed during the trip. Limited collecting may be permitted in state parks. Temperatures in Texas in August may reach 100°F by mid-afternoon. Participants should bring sunscreen and wear comfortable hiking shoes and cool clothing.

FT-10 Jewel of the Post Oak Belt: Bogs and Xeric Sands of the Gus Engeling Wildlife Management Area \$120.00

Sunday, August 14
Time: 6:30 am – 8:00 pm

Trip Leaders: Walter Holmes, Baylor University, Walter_Holmes@baylor.edu, and Jason Singhurst, Texas Parks & Wildlife Dept., Jason.Singhurst@tpwd.state.tx.us

Limit: 20
Lunch included, dinner on your own on the way back

The furthest-west well developed bogs in Texas occur in the post oak belt, which is in many ways the transition from East Texas to Central Texas. Texas's well known and unique sandyland flora is also well developed in parts of the area. The two botanists who perhaps know this area the best will take participants to see both floras at the Gus Engeling Wildlife Management Area, a true botanical jewel near Palestine, Texas. Upon arrival, we will take a small walk through a beautiful natural post oak savanna hillside seepage bog.

Lunch around noon will find us at the Beaver Pond board walk/observation platform. Then we will walk through the Carrizo Sand Formation Xeric flora, merging into the edge of the large Andrew's Quaking Bog. The bog flora at the WMA includes at least 130 species, including the rare Chapman's yellow eyed grass (*Xyris chapmanii*) and endemic roughstem aster (*Aster puniceus* subsp. *scabricaulis*), while the xeric sand hill flora has over 100 species, including Mohlenbrock sedge (*Cyperus grayioides*) and rough seed flame flower (*Talinum rugospermum*), which will be flowering just as we depart. A total of 931 species have been documented for the WMA.



We will have supper in a restaurant on the drive back to Austin. Notes: The Gus Engeling WMA is close to 4 hours drive from Austin, so this will be a quite long day, but worth every minute of it! The distance not only means that almost 8 hours will be spent on the road, but also that the botanizing will be from 10:30 am until about 3 pm, quite hot parts of the day, and in largely unshaded habitats. Abundant water will be provided (bring a small day-pack to carry water), but participants should come prepared for intense sun and heat: hats, sunscreen, and other sun-wear. Footwear appropriate for boggy ground is recommended.

Monday

FT-11 Wild Basin Wilderness Preserve ... \$30.00

Monday, August 15
Time: 8:00 am – 12:00 noon

Trip Leaders Contact Information: Mark W. Bierner, The University of Texas, bierner@mail.utexas.edu

Limit: 30
Lunch not included

Wild Basin Wilderness Preserve is an urban natural area that was founded in 1974 to protect 227 acres of pristine Texas Hill Country and to provide nature education programs. Two and one-half miles of hiking trails pass through woodland, grassland, and streamside habitats, home to hundreds of native plants and animals.

Trails meander through Spanish Oak (*Quercus buckleyi*) and Ashe Juniper (*Juniperus ashei*) woodlands down to a waterfall, plunge pool and riparian forest with tall cottonwoods (*Populus deltoids*), sycamores (*Platanus occidentalis*), and willows (*Salix nigra*). Wild Basin is also home to two endangered species of bird, the Black-capped Vireo (*Vireo atricapillus*) and the Golden-cheeked Warbler (*Dendroica chrysoparia*), which nest there from March/April through July.

Water will be provided. You should bring a pack, sunscreen and

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insect repellent, and wear comfortable walking/hiking shoes, a hat, and sunglasses. Birders might want to bring binoculars, and don't forget your camera.

El Marko Note: Insect repellent is a good thing "because them Texas skeeters'll darn near tote ya' off."

Tuesday, August 16

FT-12 Lady Bird Johnson Wildflower Center Plant Conservation, Landscape Restoration, and Information Networking \$30.00

Tuesday, August 16

Time: 8:00 am – 12:00 noon

Trip Leader: Damon Waitt, Lady Bird Johnson Wildflower Center, dwaitt@wildflower.org

Limit: 30

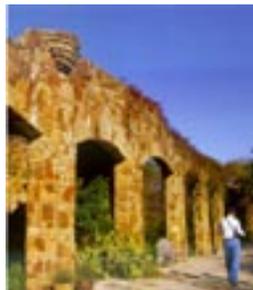
Lunch Not Included

Founded in 1982 by Lady Bird Johnson and the late Helen Hayes, the Lady Bird Johnson Wildflower Center is dedicated to protecting and preserving North America's native plants and natural landscapes. The mission of the Wildflower Center is to educate people about the environmental necessity, economic value, and natural beauty of native plants.

The grounds include several hundred species of plants native to the Edward's Plateau in naturalistic, traditional and formal designs, and one and a half miles of interpretive trails through an oak-juniper savanna and ecological restoration laboratory.

Your behind scenes tour will be led by three of the Wildflower Center's senior staff: Dr. Damon Waitt, Senior Botanist and Director of the National Plant Information Network, Dr. Steve Windhager, Director of Landscape Restoration, and Flo Oxley, Education Director and Conservation Scientist.

Water will be provided. You should bring sunscreen and insect repellent, and wear comfortable walking shoes, a hat, and sunglasses. Birders might want to bring binoculars, and don't forget your camera.



Wednesday, August 17

FT-13 A Brief Introduction to the Balcones Escarpment Flora: Balcones Canyonland Preserve \$45.00

Wednesday, August 17

Time: 8:00 am – 12:00 pm

Rose Farmer, Travis County Balcones Canyonlands Preserve, and Tom Wendt, Curator TEX/LL. Email: twendt@mail.utexas.edu

Limit: 25

Lunch: No

Austin spreads out directly over the Balcones Fault, the ancient and inactive geological fault that forms the eastern edge of the Edwards Plateau, and the resultant escarpment is called the Balcones Escarpment or Balcones Canyonlands. The canyons of this area harbor a fascinating combination of endemic, disjunct, and widespread species that add to the already unique Edwards Plateau flora of surrounding uplands and the karst caves that are home to a number of endemic invertebrates. The Balcones Canyonlands Preserve is an extensive coordinated patchwork of preserved land owned by public and private entities including the City of Austin, Travis County, Lower Colorado River Authority, Nature Conservancy of Texas, Travis Audubon Society, as well as private landowners, and is one of the country's largest urban/suburban preserves; many of its lands, including the area visited on this trip (owned by Travis County), can be visited only by previous arrangement.

We will walk through an excellent example of a limestone canyon, enjoying the beautiful canyon woodland while seeing endemic plants and discussing the role of the Preserve in this rapidly growing urban area. For this two-hour easy walk, participants should bring hats, sunscreen, and small day-packs to carry water (which will be provided).

Post Conference

Thursday - Saturday

FT-14 Big Bend National Park \$300.00

Leave 7:00 am Thursday - return early evening Saturday

Trip Leader: Joe Sirotnak, Big Bend National Park, Joe_Sirotnak@nps.gov

Limit: 10

Some meals included

Big Bend is one of the largest (800,000 acres) and least visited of America's national parks. From an elevation of less than 2,000 feet along the Rio Grande to nearly 8,000 feet in the Chisos Mountains, Big Bend includes massive canyons, vast desert expanses, and the entire Chisos Mountain range. Big Bend has national significance as the largest protected area of Chihuahuan Desert in the United States, and few areas exceed the

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park's value for the protection and study of geologic and paleontologic resources. Cretaceous and Tertiary fossils exist in variety and abundance, archeologists have discovered artifacts estimated to be 9,000 years old, and historic buildings and landscapes offer graphic illustration of life along the international border at the turn of the century. The park exhibits dramatic contrasts in climate and elevation, contributing to an exceptional diversity in plant and animal habitats. The park is home to



more than 1200 species of plants (including approximately 60 cacti species), 11 species of amphibians, 56 species of reptiles, 40 species of fish, 75 species of mammals, 450 species of birds, and about 3600 species of insects. The park boasts more taxa of birds, bats, and cacti than any other national park in the United States. For more information about Big Bend, visit www.nps.gov/bibe. Water will be provided for hikes. You should bring a pack, sunscreen and insect repellent, and wear comfortable walking/hiking shoes, a hat, and sunglasses. Birders might want to bring binoculars, and don't forget your camera.

FT-15 Texas Subtropics: "The Valley" ... \$300.00

Leave 7:00 am Thursday - return early evening Saturday
Time: 8 AM departure

Trip Leaders: Robert Lonard, University of Texas--Pan American, rlonard@panam.edu, and Tom Patterson, South Texas Community College, tfpatt@stcc.cc.tx.us.

Limit: 10
Some Meals Included

The lower Rio Grande Valley of South Texas includes vegetation types, plant species, and birds found nowhere else in the United States. Although highly modified by agriculture and urbanization, fascinating remnants remain that will be visited on this trip. We will drive from Austin to near mouth of the Rio Grande at the Gulf of Mexico, and then work our way from the coast upriver. Exactly which localities we will visit will depend on what kind of year the Valley has had (wet or dry), and whether it is raining or not when we are there—but under any combination, we will see botanical treasures. The first night we will stay in Brownsville, and that afternoon and the next morning we will visit nearby localities. Prime spots are Boca Chica, the Sabal Palm Audubon Center and Sanctuary, the Southmost Nature Conservancy Preserve, and the Palo Alto Battlefield National Historic Site. Boca Chica, on the coast, includes coastal sand dunes, clay dunes vegetated by Tamaulipan coastal scrub, and other saline communities; the area is rich in shore and other birds. The Sabal Palm Preserve and the South-

most Preserve harbor remnants of one of the most critically endangered ecosystems in the US, the lower Rio Grande alluvial flood plain forest, characterized by a mosaic of sabal palm (*Sabal mexicana*) groves, Texas ebony (*Pithecellobium ebano*) thorn forests, bottomland and riparian forests, and *resacas* (poorly drained areas representing old river channels), with many Mexican species found nowhere else in the United States. Rarest of these vegetation types are the sabal palm groves; these palms once grew profusely along the edge of the Rio Grande in small stands or groves extending about 80 miles upstream from the Gulf of Mexico, but today only a small portion of that forest remains, protected in these two preserves. The Palo Alto Battlefield is botanically interesting and includes nice examples of *resaca* and native thornscrub vegetation—and it is also fascinating as the locale of the first military engagement of the Mexican American War (May 8, 1846). Plant species known in the U.S. only from the Valley may be seen at any of these sites.

Mid-day on the second day we will drive upriver in order to visit Santa Ana National Wildlife Refuge late in the day; that night we will stay in McAllen nearby. The 2088-acre refuge is bounded by the Rio Grande; this jewel of the refuge system is an 'island' of thorn forest habitat is host or home to nearly 400 different types of birds and about one half of all butterfly species found in the United States. Both here and at the preserves visited the previous day, many Mexican bird species can be seen, including buff-bellied hummingbird, plain chachalaca, groove-billed ani, pauraque, green jay, etc. The third morning, before returning to Austin, we will proceed further upriver to drier uplands overlooking the river in Starr County to visit particularly rich examples of typical South Texas "brush" communities (Tamaulipan thornscrub, dominated by *Acacia rigidula*), as well as a *barretal* community. *Barretal*, a shrub community dominated by *Helietta parviflora*, is common further south in Mexico, but is found in the United States only on a few bluffs in this area. We may also stop by a locality of the rare *Manihot walkerae*.

Heat can be very intense in the Valley in August, especially toward (away from the Gulf); daily highs can easily be over 100 degrees. Hats, protective clothes, and sunscreen are necessary; sun glasses are highly recommended. Good boots that provide protection from spines and rattlesnakes are a must. You will need a small daypack for water (provided). Binoculars (especially for birders) are highly recommended, as well as swimming suits for evening dips at the motel. Boca Chica is extremely sandy so an extra pair of "knock-around" shoes for there might be a good idea.

The field trip leaders, Bob Lonard and Tom Patterson, between them have over four decades of experience studying the flora and vegetation of South Texas.



EDUCATIONAL AND SCIENTIFIC WORKSHOPS

All workshops are FREE, but are ticketed events. Tickets may be ordered while registering and will be included in the registration packet. If you participate in a Workshop(s) before acquiring your registration packet, bring your registration confirmation notice so that you have a record of your ordered ticket. All workshops will be held in the Hilton on Sunday, August 13. Check your tickets for the Workshop locations.

All Workshops are sponsored by the Botanical Society of America in conjunction with the workshop providers
A limited number of seats are available - Register early

Full Day

W-1 8:00 am - 5:00 pm Writing floristic treatments: a workshop for authors, based on the Flora North America experience

All Morning - 4 Hour

W-2 8:00 am - 12:00 pm Activities & Ambassadors: Using Living Collections to Teach Schoolchildren through Field Trips

W-3 8:00 am - 12:00 pm Keep Your Biology Class Alive with Fast Plants

Early Morning - 2 Hour

W-4 8:00 am - 10:00 am Technical Writing I

W-5 8:00 am - 10:00 am Teaching Through Inquiry including an introduction to BSA Sci- π

Late Morning - 2 Hour

W-6 10:15 am - 12:15 pm BSA Sci- π : Seeds of Change in the Classroom

Late Morning - 1 Hour

W-7 11:00 am - 12:00 pm Writing for ESL Authors

All Afternoon - 4 Hour

W-8 1:00 pm - 5:00 pm Implementing a Cooperative Group Learning Environment in Hands-On Biology Labs for Non-majors: Lessons from the Trenches

W-9 1:00 pm - 5:00 pm The Tree of Life

W-10 1:00 pm - 5:00 pm C-Ferns in the Classroom

Early Afternoon - 2 Hour

W-11 1:00 pm - 3:00 pm Technical Writing II

W-1 Writing floristic treatments: a workshop for authors, based on the Flora North America experience.

Time: 8:00 am - 5:00 pm

Presenter: Dr. Nancy R. Morin, The Arboretum at Flagstaff, 4001 S. Woody Mountain Road, Flagstaff AZ 86001 U. S. A., Phone: 928-774-1442 ext. 104, Fax 928-774-1441, email: Nancy.Morin@NAU.EDU, and the Flora of North America Association

This workshop will sharpen authors' skills in preparing and writing treatments for major floristic projects such as the Flora of North America project. Included will be considerations for consulting herbarium specimens, on how to organize information for large taxa, on nomenclature and bibliography, and on how to provide information for illustrators. Furthermore, the entire editorial process (used by FNA) as it affects authors will be covered, from initial submission through composition. The workshop is open to all authors of floristic treatments, actual or prospective, even though the emphasis will be on FNA approaches. Participants are encouraged to review the latest FNA Guide for Contributors, as it appears on the FNA web site.

W-2 Activities & Ambassadors: Using Living Collections to Teach Schoolchildren through Field Trips.

Time: 8:00 am - 12:00 pm

Presenter(s): Matthew Cole, Director of Education, Green Bay Botanical Garden, PO Box 12644, Green Bay WI 54307-2644, V: (920) 491-3691, F: (920) 490-9461, mcole@gbbg.org

The living collections in college and university gardens, greenhouses and arboreta can be a great resource for schools. Through field trips and public visits, you can promote the importance of your work, the mission of your institution, Botany, Science and the beauty of the plants themselves. School groups can be your outreach to the community, give your students experience in teaching or even serve as a revenue stream, but today's school teachers have specific needs. Teaching to standards or benchmarks alone may not convey the value of your collection or the excitement students can find in plants. Learn how to make your collections (and botany) accessible to visitors through an Ambassadors and Activities field trip model. After exploring examples, participants will have a chance to work on tours that would fit their own institution. If they choose, participants can develop an outline for Ambassadors and Activities visit appropriate for their collection.

W-3 Keep Your Biology Class Alive with Fast Plants

Time: 8:00 am - 12:00 pm

Presenters: Paul H. Williams, Atwood professor emeritus, Univ. of Wisconsin-Madison & WFP Program Director, Wisconsin Fast Plants Program • University of Wisconsin – Madison Science House • 1630 Linden Drive • Madison, WI 53706 Phone: 1-800-462-7417, www.fastplants.org

Dan Lauffer, WFP Assistant Director

Coe Williams, WFP Program

Students grasp the concepts working with a life cycle of Fast plants; portable take-home experiments; techniques for producing your own seed; variation, inheritance and evolution; meet the home team of Fast Plants, known for their intensive, hands-on workshops.

W-4 Technical Writing I

Time: 8:00 am - 10:00 pm

Presenter: Beth E. Hazen, Production Editor, *American Journal of Botany*

Learn how to tighten and polish your writing, conquer the comma, identify “red flags,” and more. Pertinent grammar, punctuation, terminology and word usage, style, tables and figures. Emphasizes frequent problems and examples from manuscripts submitted for publication.

Receive reference handbook written for plant scientists, expands on workshop topics, includes problems and writing resources, premailed to participants for review and problem solving
Note: You do not need to attend Technical Writing II to take part in this workshop.

W-5 Teaching Through Inquiry including an introduction to BSA Sci - π

Time: 10:00 am - 12:00 pm

Presenter: Gordon Uno, University of Oklahoma, E-mail: guno@ou.edu

Inquiry, which has been recognized as the method to drive science education reform, helps students discover and construct an understanding of scientific concepts on their own under the guidance of the instructor. This workshop will introduce participants to different kinds of inquiry and the general techniques of inquiry instruction using a variety of short, hands-on activities and information about the Introductory Botany course at the University of Oklahoma, which is taught using this method. In addition, participants will learn how to develop “discovery” activities on their own and how to make traditional laboratories more inquiry-oriented. We will also address the most common problems in teaching biology today, with suggestions and examples of how to deal with or overcome these problems. This workshop will introduce participants to a new biology education initiative from the American Institute of Biological Sciences (AIBS); ideas for the initiative will be solicited.

W-6 BSA Sci - π : Seeds of Change in the Classroom

Time: 10:15 am - 12:15 pm

Presenter(s): Bill Dahl, Beverly Brown, Claire Hemmingway, The Botanical Society of America

The Sci- π project, recently initiated by the Botanical Society of America, provides an innovative and well-resourced way to address common standards of learning for science using plants. The project involves the hands-on approach of sprouting seeds to teach inquiry and the scientific process. In this project, students conduct experiments on seed germination and seedling growth, and receive feedback from peers and plant scientists. Classes across the country will be linked via a web site that facilitates discussions among students at multiple levels, including middle school, high school, and undergraduates. When students have more advanced questions, experts in the field are available. The web site includes a “Teachers Only” section where teachers can share successful approaches and access detailed supporting material for both the botanical content and using a guided inquiry or inquiry-based approach. The project is low cost and does not require specialized equipment. The activity addresses several of the National Research Council’s National Science Education Standards including life cycles of organisms, structure and function in living systems, reproduction and heredity, diversity and adaptations of organisms, and interdependence of organisms. There are also many ways to create interdisciplinary links, particularly with mathematics and chemistry. It is our hope that by attending this workshop you will see the benefits of participating in our on-line scientific exchange and bring the excitement of experimenting with sprouts to your classrooms.

W-7 Writing for ESL Authors

Time: 11:00 am - 12:00 pm

Presenter: Beth E. Hazen, Production Editor, *American Journal of Botany*

Articles and prepositions for authors whose native language is not English.



W-8 Implementing a Cooperative Group Learning Environment in Hands-On Biology labs for Non-majors: Lessons from the Trenches

Time: 1:00 pm - 5:00 pm

Presenter: Dr. Staria Vanderpool, Department of Biological Sciences, Arkansas State University, State University, AR 72467. Phone: 870 972 3082, FAX 870 972 2638; Email: svand@astate.edu

A hands-on workshop for people who may be considering modification of lab experiences for non-majors biology lab from a traditional confirmatory/demonstration model to an investigative model. Our non-majors biology program is typical of mid-size and large institutions, with high enrollment of students in a required course that is staffed by graduate teaching assistants under the supervision of an instructor. Our typical annual student enrollment in the lab is 1500 students so there are significant logistical problems involved in developing, staffing, and managing an open-ended, investigational laboratory environment. Solutions to some of these problems include using a cooperative learning method, multi-week labs, and concentration on the process of scientific investigation. Student response has been positive as we resolved implementation problems. Assessment of the effectiveness of the change indicates significant increase in the student's overall interest in science, understanding of the use of science reasoning, and the role of science in non-science careers, thus validating the role of laboratory sciences as part of the general education component of the undergraduate degree program.

W-9 The Tree of Life

Time: 1:00 pm - 5:00 pm

Presenters: Brent D. Mishler, Director, University and Jepson Herbaria and Kirsten M. Fisher, Dept of Integrative Biology, University of California, Berkeley



Reconstructing the tree of life is evolutionary biology's greatest challenge. This workshop will provide an introduction to the concepts behind "tree thinking" and phylogenetic principles, and will review our most current understanding of the overall tree of life. We will introduce the basic methods of phylogenetic analysis and conduct a hands-on demonstration of classroom exercises appropriate for grades 9-12 and introductory university level biology classes. The green plants are emphasized, because of their utility in teaching these concepts, but the workshop will also introduce the general principles behind the algorithms that are used to build phylogenetic trees in computer analyses, and will provide an interactive demonstration of computer-based tree reconstruction. These basic exercises will provide the basis for understanding the principles behind reconstructing the tree of life, and we will discuss the practical importance of understanding the evolutionary relationships of organisms.

Sponsored by three National Science Foundation supported projects: Deep Gene, The Green Tree of Life and CIPRES



W-10 C-Ferns in the Classroom

Time: 1:00 pm - 5:00 pm

Presenter(s): Whitney Crispen Hagins, Lexington High School, Lexington, MA 02421

C-FERN of *Ceratopteris* is a genus of ferns that are found in many tropical and subtropical regions. They are an ideal model plant system for teaching many aspects of botany and genetics. The concept of alternation of generations actually comes alive with C-ferns since the students can see each of the generations and follow their development. Students can see the chemotactic response of sperm swimming towards the archegonia. Genetic exercises with C-FERN actively involve students in acquiring data, testing hypotheses and manipulating the organism. For example, students can follow a trait that is expressed phenotypically in 2 distinct generations (gametophyte and sporophyte). After collecting data on F1 segregation in the gametophyte generation, students initiate and visualize fertilization by adding water to the cultures. C-FERNS are easily grown in the classroom with minimal equipment. Their relatively short life span makes them ideal organisms for student investigations. Participants will learn how to grow C-FERNS and will receive copies of investigations.

W-11 Technical Writing II

Time: 1:00 pm - 3:00 pm

Presenter: Beth E. Hazen, Production Editor, *American Journal of Botany*

Learn how to tighten and polish your writing, conquer the comma, identify "red flags," and more. Pertinent grammar, punctuation, terminology and word usage, style, tables and figures. Emphasizes frequent problems and examples from manuscripts submitted for publication.

Receive reference handbook written for plant scientists, expands on workshop topics, includes problems and writing resources, pre mailed to participants for review and problem solving.

Note: You do not need to attend Technical Writing I to take part in this workshop.



LOCAL TOURS

Several local tours of the Austin area have been planned to enhance the conference program. Tour fees include transportation, entrance fees and lunch as indicated. Ticket prices are the same for adults and children. Tours require a minimum number of participants. All tours will depart from the lobby of the Hilton. Please read the Refund and Cancellation Policy. Companion tours are ticketed events; tickets may be purchased while registering in advance and will be included in the registration packet. On-site registration may not be available.

LT-1 Have a Capitol Day \$35.00

Monday August 15th
Time: 9:30 am - 3 pm

A Capitol idea for an outing – an insider’s view of the capitol of the great Lone Star State. Enjoy a look into where our Texas legislature meets, and learn the history of our government and about some of the famous and infamous Texas politicians who have walked these hallowed halls.

Our tour offers a stop at the State Capitol Building and Visitors Center. The State Capitol Building, which was completed in 1888, is currently the third building to serve as the Capitol. It was constructed of red granite taken from Granite Mountain near Marble Falls, Texas and modeled after the classical style of our Nation’s Capitol.



The height of the dome is 309 feet, over seven feet higher than the United States Capitol. We will also drive by The Governor’s Mansion. This is one of the oldest buildings in the complex, completed in 1856, and one of the oldest in the city.

The history of the Ransom Center officially began in 1957, when the U.T. Vice President and Provost Harry Hunt Ransom founded the Humanities Research Center at The University of Texas at Austin. Today its major emphasis is on the study of culture of the United States, Great Britain and France. The Center’s collections contain some 30 million leaves of manuscripts, over one million rare books, five million photographs, photographic equipment and 100,000 works of art. Highlights include the Gutenberg Bible (circa 1455) the world’s first photograph (circa 1826), important paintings by Frida Kahlo and Diego Rivera. The Center is used extensively for research by scholars from around the world and offers ever-changing exhibitions and events.



For lunch-on-your-own, we will head to Congress Avenue, crossing the river to legendary Hill’s Café for a Texas lunch under 100 year-old oak trees. Open since 1947, the atmosphere is only matched by the great home cooking! The Musician’s Museum is an extra treat, almost as good as dessert!

LT-2 Texas Legends & Lore..... \$40.00

Tuesday August 16th
Time: 9:30 am - 3 pm

Yes, everything really is bigger in Texas - if you don't believe it, just ask a Texan. We begin with the Story of Texas, The Bob Bullock Texas State History Museum. A most magnificent museum honoring the memory of one of Texas’ legendary politicians, Bob Bullock, as well as paying tribute to the deep love he had for his home state!

This museum exemplifies the bigger than life persona of Texas and Texans. There are a variety of fun and whimsical displays that depict Texas Valor, Vision, Pride, Perseverance, Swagger and Showmanship!

We will experience the Texas Spirit Theatre located on the second floor which is a multimedia event entitled “The Star of Destiny”. Your guests will feel the fury of the hurricane that rocked the Gulf Coast, experience the heat of the explosions that flattened the entire city and their hearts will rumble with the lightning and thunder from the Texas prairie lands. The ghost of Texas’ history leads you through a one-of-a-kind adventure.



The museum is also home to the best lil’ kitchen in the Lone Star State, The Story of Texas Café, where tasty snacks and mighty fine lunches are the fare.

What bigger Texas Legend than the late President Lyndon Baines Johnson? The Lyndon Baines Johnson Library and Museum on the University of Texas Campus houses Johnson’s desire to “show the facts, not just the joy and triumphs, but the sorrow and failures too”. This incredible facility is one of eleven Presidential libraries administered by the National Archives and Records Administration. Displays include the landmark Civil Rights Programs, the war in Vietnam and many other historical events which took place during the Johnson administration.



LOCAL TOURS

LT-3 Shop 'til you Drop!.....\$35.00

Wednesday, August 17th

Time: 10 am – 4pm

If shopping is your bag, then this tour is as good as it gets! Our first stop, Prime Outlets at San Marcos, offers more – more brands, more selection and more value! The Center’s inviting landscaping and hacienda-style architecture make shopping in the more than 115 most famous name-brand outlets a buyer’s bliss! Enjoy lunch on your own at one of the 15 restaurants in the center. With names such as Guess, Tommy Hilfiger, SAS Shoes, Coach, Dooney and Bourke, Gap and Samsonite to name just a few, a day of sensational shopping is a sure thing! Whether shoes, clothing, the perfect wedding gift or a treasure, you’re sure to find it here!



For a very different kind of shopping experience, we move on to Gruene, (pronounced “Green”) a turn-of-the-century cotton farming community located on the banks of the Guadalupe River. This quintessential Texas town offers an assortment of antique and specialty shops, restaurants and even its own wine tasting venue. Enjoy a slower pace and investigate a treasure trove of wares at your fingertips. Stop in to visit Gruene Hall, the oldest dance hall in Texas, having had many country-singing stars and legends perform there over the years. Willie Nelson, George Strait, Jerry Jeff Walker, Lyle Lovett are some of the well-known singers who’ve played here. A complete list of the singers is displayed inside the Hall which is still the best place to scoot a boot!

SOCIETY AND ASSOCIATION EVENTS

The following society and group events require tickets. Tickets may be purchased in advance or on-site at the Registration area. Pre-paid event tickets will be included in the registration packet which will be distributed on-site. Event venues will be announced on the tickets and in the Program. A limited number of tickets may be available for purchase at the Registration Desk on-site at the meeting, but availability is not guaranteed.



Monday, August 15

TE-1	7:00 am - 8:30 am	ABLS Breakfast.....	\$15.00
TE-2	12:00 pm - 1:30 pm	AFS Luncheon	\$25.00
TE-3	6:00 pm - 8:00 pm	Texas-Exes Tex Mex Reception.....	\$20.00
TE-4	6:30 pm - 10:00 pm	Paleobotanical Banquet and Auction	\$35.00

Tuesday, August 16

TE-5	7:00 am - 8:30 am	Missouri Botanical Garden Breakfast.....	\$15.00
TE-6	11:30 am - 1:00 pm	Economic Botany Luncheon	\$25.00
TE-7	5:00 pm - 7:00 pm	Ohio State University Reception.....	\$20.00
TE-8	6:00 pm - 10:00 pm	ASPT Banquet and Auction	\$40.00

Wednesday, August 17

TE-9	7:00 am - 8:30 am	Miami University of Ohio Breakfast.....	\$15.00
TE-10	7:00 pm - 9:30 pm	BSA Banquet.....	\$40.00

