Did you know we offer tours of the Garden in all seasons? A garden tour makes a fantastic outing for your garden club, local church, civic organization, retirement community, or even family reunion. Our trained docents will enthrall you with the beauty, history and lore of the South Carolina Botanical Garden. In addition, all proceeds from tours support the Garden, and enable our further growth and development.

Our first tour option, the Garden Overview, lasts approximately an hour and explores the history of the Garden and the seasonal highlights of the landscape and the natural world. Visit the camellia garden during the winter, the mountain habitats of the Natural Heritage Garden in the spring. In the summer, the pollinator gardens come alive and in the fall the garden is full of color and life. We are always adding new habitats and exhibits to the landscape and every visit there is something new to see and learn. Also, if your group has a particular interest, we will do our best to accommodate it. The cost is $40 per tour, with an additional fee of $4 per person over 10 participants.

The second option is the Natural Heritage Garden Tour. This tour lasts approximately an hour and a half and visitors explore our unique Natural Heritage Garden with the aid of a knowledgeable docent. This tour enables the visitor to step back in time to when buffalo and wolves inhabited the Piedmont prairies and Native Americans managed much of the landscape with fire. A walk through this unique garden is a journey through South Carolina from the coast to the mountains, and a unique way to learn more about the people, plants and animals of our state. The cost is $60 per tour, with an additional fee of $6 per person over 10 participants.

To book a tour, please email scbg@clemson.edu and mark the subject line “Tour Enquiry.” We hope to see you soon!

~ Sue Watts, Educator
Director’s Note

There is no time like spring to contemplate a sense of renewal and fresh perspective. I started at the Garden in 2016 as a landscape architect and am currently filling in as Interim Director during Dr. McMillan’s sabbatical. Stepping into this temporary role has given me a new set of eyes to view our wonderful Garden. The amount of work that goes into running this community treasure is truly amazing. Spring is our busiest time – rains come bringing beautiful flowers, buds, and weeds that appear overnight, visitors flood the Garden seeking warm weather and fresh blooms, hundreds of Garden supporters gravitate to our nursery to shop our Spring Plant Sale, and families attend our spring events in ever-growing numbers. Through it all, our staff, students, and volunteers work steadfastly to provide the best experience to our visitors.

As any good gardener knows, no garden is ever static. Our Garden continues to grow and transform, providing a wealth of experiences for our visitors. We have multiple ongoing and upcoming projects right now - continued expansion of the Children’s Garden, a new pedestrian path from the front of the Garden to the Natural Heritage Garden, the expansion of the Celtic Garden collection, and turf renovation at our Visitor’s Center complex and Amphitheater.

As part of the Children’s Garden expansion, the construction of the McBride Aquatic Garden is underway at the Duck Pond. This beloved area of the Garden will be the site of a new collection of aquatic plants including lotuses, colorful water lilies, and native aquatics. An architecturally unique boardwalk and gazebo will entice children of all ages to experience the pond more intimately, and will serve as a focal point for the lower corner of the Children’s Garden.

As we continue adding to our Children’s Garden programming and other areas, we would like to thank all of the people who support the Garden. Your membership, donations, and volunteerism allow us to install and maintain landscapes that support and promote our core values.

~ Shannon Barrett, Interim Director
Spring is here! After a ridiculously wet January and February, it seems that we are finally on track weather-wise. Bulbs are exploding in swathes of color, trees are blooming, plants are peeking out of the ground, and it is truly beautiful in the Garden right now.

Unfortunately, we experienced a considerable amount of tree damage this winter. As a result, the arborist crew has been very busy pruning and removing dead trees throughout the Garden.

Many new projects are undertaken during the winter months. We completed a new walkway through the Quercetum (the collection of oak trees in the grassy median between the front gate and the Visitor’s Center). This path should help improve visitor safety by reducing, and hopefully eliminating, pedestrian traffic on the roadway.

In both the new Celtic Garden, and the well-established Hosta Garden, slate gravel paths have been installed. This is such a nice surface to walk on and it provides a very clean and finished look. The Celtic Garden is now nearing completion. We recently added many perennials, including a large number of heaths, which will brighten the landscape enormously. If you haven’t visited the Celtic Garden yet, you really should!

In the Children’s Garden, some new additions have been made to further children’s play options. I’d like to thank two local Eagle Scouts for their projects in the Children’s Garden this spring. Ned Mayo made our bamboo musical instruments along the main path, and a potting table for children to plant up a seed to take home. Connor Reid built a deck entering the greenhouse play area. This deck makes it easier for strollers and wheelchairs to enter, and it doubles as a stage area for impromptu performances. A stump walk, designed for kids to play on, has proven very popular with all! We need to put a new metal roof on the shed in the Children’s Garden, as the wood shingles have not held up to the winter winds and rains.

I’d also like to welcome this year’s new Master Gardener class who have signed up to volunteer in the Garden. Our volunteer force is constantly growing, and I can’t thank you all enough! We couldn’t maintain the Garden without your help, and your friendship is an added bonus. Thank you to the Garden staff and volunteers for helping keep the Garden the beautiful place that it is.

And, a big thank you to our Friends. Your Friends membership is critical to our continued growth and progress. When you become a Friend, your donation enables us to undertake all these projects, big and small.

Have a great Spring!

Kathy Bridges, Garden Manager
More than 1,000 community members joined us on March 30 to celebrate the Clemson Experimental Forest (CEF) at Forest Fest 2019. While exact attendance numbers are still being tallied, it looks like we have matched, if not surpassed, the previous record number. The weather could not have been better and everybody left knowing a little more about, and feeling a little more connected to, the Clemson Experimental Forest.

Our 4th Annual Forest Fest included many of our favorite activities of years past, plus exciting new ones that all visitors seemed to enjoy. As in years past the community was invited to “come anytime and to choose their own adventure.” A variety of interactive demonstrations and activities were offered at 5 different locations in the Issaqueena Area of the CEF. A giant thank you to our partners listed below for helping make Forest Fest 2019 a success. The Forest never disappoints and everything is better when you share it!

Clemson University Forestry Club; Clemson University Parks Recreation and Tourism Management; CORE (Clemson Outdoor Recreation and Education); Clemson Invasive Species Program; Clemson Stream Team from Center for Watershed Excellence/SC Adopt-A-Stream with student from RISE (Residents in Science and Engineering); SC Upstate Equine Council; South Carolina Native Plant Society; Critters and More, on the Go with the South Carolina Department of Natural Resources.

~ James Wilkins
Education & Resource Coordinator CEF/SCBG

Photos: Top row (l-r) greetings from a new bridge, log sawing, dogs on leashes welcome (good boy!)

Sidebar: axes, wading, meeting critters, knife throwing, aquatic macro-invertebrate study, kayaking and making detailed notes of everything
ARCHOSAUR ADDITIONS

You may be asking yourself, what is an archosaur! Archosaurs are the group of reptiles that include crocodiles, dinosaurs (including birds), pterosaurs (those flying Mesozoic reptiles) and their extinct relatives. The anatomy of this group of reptiles differs in many ways from more familiar living reptiles such as turtles, snakes and lizards. The earliest archosaurs date to the early Triassic (~250 million years ago) and mostly consist of large, warm-blooded, upright-walking crocodile-like animals with mouths full of sharp teeth! It’s hard to imagine a creature much more intimidating than that! As dinosaurs are always popular with museum guests and as our Curator, Dr. Adam Smith, specializes in the evolution of birds, we have recently made some exciting additions to our displays on archosaurs. Previous museum visitors will be familiar with our well-received display on “Giant Flightless Birds”.

Figure 1. The Elephant Bird (left) was the heaviest bird to ever have existed, with the largest individuals estimated at 1600 pounds! Human (middle) and Ostrich (right) the heaviest living bird, shown for scale. Elephant birds were native to Madagascar and were driven to extinction, likely by predation by humans, around 1000 years ago.

Figure 2. Pseudo-toothed Birds such as Pelagornis had the largest wingspan of any known bird and got their named based on the tooth-like projection along their beaks (see the inset of the skull now on display at the BCGM).

To that display we have recently added a skeletal reconstruction of the foot of an Ostrich, the heaviest living bird, and the wing bones of an Elephant Bird, the heaviest bird known to have ever existed. Many visitors have commented on how the juxtaposition of the large bodies and eggs of these species stand in such stark contrast to their diminutive wings and other features. Sticking with our theme of adding fossils of really big birds to our collection, the BCGM recently acquired a cast of the skull of an extinct bird known as a “Pseudo-tooth”. The largest of these truly magnificent seabirds had wingspans of more than 6 meters, and the largest one of all hails from the Charleston area of South Carolina!

Figure 3. Mosasaurs (top) were the top marine predator for much of the Mesozoic and actually preyed on some species of dinosaurs. Their closest living relatives are the endangered Komodo Dragons (bottom).

Just so those non-archosaurian reptiles would not feel left out, we also just added casts of the skulls of a mosasaur (a giant marine reptile from the age of the dinosaurs) and its closest living relative and largest living reptile, the Komodo Dragon! Be sure to visit the BCGM soon to see these and many other new items on display in the Benson Gallery.

PLEASE HELP US TO CONTINUE IMPROVING YOUR GEOLOGY MUSEUM

We need your help to support our ambitious research and educational efforts. The BCGM needs a 4-wheel drive truck or SUV to conduct field work and bring new dinosaur fossils back to Clemson for study by students and public display. If you have a vehicle you would like to donate, please contact Curator Adam Smith at bcgm@clemson.edu. Contribute directly by choosing “Geology Museum” from the drop-down menu at https://cualumni.clemson.edu/give/scbg or email us to discuss our projects and how you can contribute. Also see our Facebook page and our website (www.clemson.edu/geomuseum) for details regarding upcoming special exhibits and events.
**Stroller Struts**
Begin with a story and then set off on a Garden walk, exploring the day’s theme. This free program is ideal for preschoolers, but all ages are encouraged to join in the fun!

**Friday, June 7:** Summertime Saunter
**Friday, July 5:** Creek Crawl
**Friday, Aug 2:** Butterfly Boogie

**Fee:** FREE, but donations are welcome and support educational programs at the Garden.
**Time:** 10 - 11 a.m.
**Location:** Meet at the Garden Amphitheater
**Contact:** allisoo@clemson.edu or 864-656-0203

**High Flying Avian Adventure**
Birding is a great way to enjoy the outdoors, improve observation skills and just have fun! We’ll learn fun facts about birds and beginner birding skills for locating and identifying common birds of South Carolina. We’ll hear and see birds on a garden walk, and we’ll finish by creating nature journals and recording the day’s feathered friend findings! We will provide children’s binoculars, but please feel free to bring your own binoculars if you have them. Please register at least 3 days in advance.

**Fee:** $7 (10% member discount)
**Time:** 3:30 - 5:30 p.m.
**Location:** Nature Learning Center
**Contact:** allisoo@clemson.edu or 864-656-0203

**Budding Artist: Rock Cacti for Father’s Day**
Children will enjoy a walk through the desert garden, learning fun facts about cacti, and turning rocks into cacti with the help of paint and imagination. Finished products make great Father’s Day gifts too! Please register at least 3 days in advance.

**Fee:** $10 (10% member discount)
**Time:** 2 - 4 p.m.
**Location:** Carriage House, behind Garden Visitor Center
**Contact:** allisoo@clemson.edu or 864-656-0203

**Budding Artists: Ikebana for Mother’s Day**
Discover the Japanese art of arranging flowers and other natural materials! Children will create arrangements as well as vases to keep or give away as gifts! All ages are welcome, but younger children will require hands-on assistance from an adult. Please register at least 5 days in advance.

* Due to curing time, vases will need to be picked up after 24 hours.

**Fee:** $10 per person (10% member discount)
**Time:** 3:30 - 5:30 p.m.
**Location:** Nature Learning Center
**Contact:** allisoo@clemson.edu or 864-656-0203

**Creek Critters**
Enjoy the coolness of the creek, in every sense! Children will become citizen scientists, taking an up-close look at some of the creek’s smallest and coolest residents, recording findings and learning their significance. Please wear shoes that can get wet and dirty. Please register at least 3 days in advance.

**Fee:** $7 per person (10% member discount)
**Time:** 3 - 5 p.m.
**Location:** Nature Learning Center
**Contact:** allisoo@clemson.edu or 864-656-0203
www.clemson.edu/scbg to register.
To check for last minute availability.

Family Programs

First Friday Walks with David Bradshaw
October - March 9 a.m. - 7 a.m.
Join David Bradshaw for one of his legendary First Friday Walks. His breadth of knowledge, both natural and cultural, makes this an exceptional opportunity. No matter what the season you will always learn something interesting or experience the Garden anew.

Friday, August 16
Honeybee Hootenanny
Children will enjoy learning about the power of pollination and the importance of honeybees as pollinators. Discover the honeybee’s quest for pollen and nectar, and observe real honeybees in the garden! Please register at least 3 days in advance.
Fee: $7 per person (10% member discount)
Time: 3 - 5 p.m.
Location: Nature Learning Center
Contact: allisoo@clemson.edu or 864-656-0203

Adult Programs

Tuesday, June 11
Hands-on Gardening:
Gardening for Small Spaces with LayLa Burgess and Adair Hoover
Straw bales and raised beds are two ways to garden in small spaces. In this workshop, learn how to turn a straw bale into a rich compostable planter for veggies or herbs in a few simple steps. Alternatively, square foot gardening might be for you! LayLa will show you how a small raised bed can produce many different herbs in a season, with just a little extra organization. We’ll also be using herbs to produce a savory dish, so don’t be left out on the surprise!
Fee: $25 (10% discount)
Time: 10 a.m. - noon
Location: Nature Learning Center

Saturday, May 18
How to Make an Insect Collection with Entomologist Mike Ferro
Making an insect collection that is beautiful, has scientific value, and can last a lifetime (actually much longer) is relatively easy, environmentally friendly, and not at all expensive. Learn how to collect, preserve, and identify insects. Also good if you’re only interested in hunting with a camera. We’ll cover a lot of material in a short time. Ages: interested 10 year olds to adult. Bring your own lunch, snacks will be provided. Please pre-register.
Fee: $25 (10% member discount)
Time: 9 a.m. - 4 p.m.
Location: Nature Learning Center
Contact: watts9@clemson.edu or 864-656-2836

Saturday, June 15
Beneficial Bats
Join naturalist Ray Long, member of the SC Bat Working Group, and Sue Watts, Garden Educator, to learn more about this misunderstood species. We’ll begin at the Caboose Parking Area to learn more about bats in South Carolina, the challenges they face and how you can help them out. As we walk the Garden in the cool of the evening, we’ll see who we can find swooping through the air by acoustic detection.
Fee: $7/family (10% member discount)
Time: 7:45 - 8:45 p.m.
Location: Meet at the Caboose Parking Area
Contact: watts9@clemson.edu or 864-656-2836

Saturday, July 27
Magical Moths: National Moth Week
Join us to learn about magical moths the unsung members of the order Lepidoptera (butterflies and moths). We’ll join individuals across the globe in a gigantic citizen science project to discover more about this undervalued insect.
Fee: $7/family (10% member discount)
Time: 8:30 - 9:30 p.m.
Location: Meet at the Geology Museum Parking Area
Contact: watts9@clemson.edu or 864-656-2836
Saturday, May 11

**Melody Garden Mother’s Day**

**Family Sing-a-long**

Join Rebecca Smith, children’s songwriter and multi-instrumentalist, for an afternoon singing and celebrating Mother’s Day and Spring! Look forward to original and familiar songs about motherhood and springtime beauties like flowers and butterflies. Children will be able to dance with percussion instruments at the front of the stage, if they wish! Mrs. Rebecca will let the children strum her guitar, ukulele, or banjo at the end of the interactive performance. Bring a picnic blanket, snacks or lunch, and enjoy a beautiful afternoon in the Garden!

**Fee:** Free, donations appreciated

**Location:** Amphitheater

**Contact:** scbg@clemson.edu or 864-656-3405

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**SLABFEST**

**SATURDAY July 20**

10am - 4pm

**Come for a day of fun!**

Check out our selection of

**WOOD SLABS!**

We are selling a variety of hardwoods cut in various lengths and widths suitable for large woodworking projects.

**Slabs | Food | Music | Demos | Vendors**

**LOCATION: SCBG NURSERY AREA**

Proceeds from this event support Garden operations.

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**Thank you to Our Garden Board**

MARY ELDER, CHAIR

BOB DIBELLA

DONNA DONNELLY

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FRAZER PAJAK

J. DABNEY PEEPLES

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MARCIA RADAKOVICH

CAROL SAVAGE

JOE TURNER
New in the Gift Shop

The only tool you'll ever need!!

Presenting the Japanese Hori-Hori Knife

It’s a trowel and a knife combined! It’s a sharp and efficient digger. There’s a saw blade for easily dividing perennials. Great for weeding—it’s wonderful to get out deep rooted weeds. It also has measurements for bulb planting or spacing seeds and seedlings.

Polished stainless steel blade and contoured handle with non-slip surface.

“I only need one tool now instead of 3-4.”

~ Kathy Bridges

Birds are a wonderful addition to any garden, and certainly to the SCBG. As well as bringing life, activity, and interest to a site, they provide some real ecological benefits to the landscape. Pest control, pollination, and weed control are all valuable services furnished by birds.

The easiest way to add birds to any garden is to provide the habitat basics: food, water and shelter. Our commitment to limiting our pesticide use and adding a wide diversity of native plants has significantly increased the number of bird species that visit us. To date, we have recorded 209 species in the Garden. Recently, we created a colorful illustrated guide to Garden birds, available on request.

Our current bird-watching station, located in the Children’s Garden, is frequently teeming with birds and it is fascinating to spend time watching the action. Recently, we have noticed the large numbers of smaller birds have also attracted the attention of a red shouldered hawk, which has definitely heightened the drama.

In the spring and fall, you can find serious birders in the parking area below the Geology Museum. Binoculars firmly fixed to their eyes, they intently follow the progress of warblers and other migratory birds. This location will be the site of a new bird-viewing garden. This exciting project will transform one of our best bird habitats into a full-fledged birding garden, complete with ideas for how to transform residential gardens into bird sanctuaries. Added amenities, including a bird-viewing blind, will delight bird lovers and educate the public on the value of birds in our landscapes.

Visit https://www.audubon.org for a list of native plants for birds.
Great Green Adventure Camp
We’ll focus on hands-on exploration of the outdoors and ways to connect to and protect the natural world. Splash through creeks, climb rocks and meet frogs and toads close-up! This year we are excited to extend Garden Explorations Discovery Camp to include a fantastic day on Lake Jocassee with naturalists and SCBG staff. Suggested Age: 6-12. Contact: watts9@clemson.edu
Fee: $195
Time: M, T, W, F: 8 a.m. - 3 p.m.
Th: Lake day - pick-up 4 p.m.
Location: Nature Learning Center

June 24-28, 2019
Great Green Adventure Camp
We’ll focus on hands-on exploration of the outdoors and ways to connect to and protect the natural world. From day to day, campers will become gardeners, artists, chefs, ethnobotanists, field biologists and conservationists, all while learning about the importance of teamwork, sustainability, and time spent in nature. Suggested Age: 6-12. Please register by June 14. Contact: allisoo@clemson.edu or 864-656-0203
Fee: $195
Time: 8 a.m. - 3 p.m.
Location: Nature Learning Center

June 17 - June 21
Garden Explorations Discovery Camp
An exciting summer day camp adventure brings nature discovery to life. Children explore the Garden’s habitats through many fun hands-on activities and discover the wonders of the natural world. Splash through creeks, climb rocks and meet frogs and toads close-up! This year we are excited to extend Garden Explorations Discovery Camp to include a fantastic day on Lake Jocassee with naturalists and SCBG staff. Suggested Age: 6-12. Contact: watts9@clemson.edu
Fee: $195
Time: M, T, W, F: 8 a.m. - 3 p.m.
Th: Lake day - pick-up 4 p.m.
Location: Nature Learning Center

July 8-12
Garden Creativity Camp
In this camp creativity reigns! The garden is our palette and provides our media - we will craft, paint and explore many dimensions of our creative spirit through garden-based activities. Learn about famous artists who were inspired by the natural world. Suggested Age: 6-12. Please register by June 30. Contact: watts9@clemson.edu
Fee: $110
Time: 8 a.m. - noon
Location: Nature Learning Center

July 15-19, 2019
Creature Power Camp
Go wild in this camp, inspired by the hit PBS kid’s show, Wild Kratts! Enjoy learning about the animal kingdom through outdoor exploration, games, crafts and more. Have a blast earning Creature Powers as you complete each day’s mission! Please register by July 5. Suggested Age: 6-12. Contact: allisoo@clemson.edu or 864-656-0203
Fee: $110
Time: 8 a.m. - noon
Location: Nature Learning Center

July 22-26
Time Travelers Camp
Live the past! History comes alive in this week-long camp. Join us at the Hunt Cabin and the survival skills needed in the 19th Century. Learn how to build a cabin, learn about rice, indigo and cotton, make period clothes and more! In this camp, children will be immersed in South Carolina’s history and learn about the people and cultures that make up the diversity of our state. Suggested Age: 6-12. Please register by July 12.
Fee: $110
Time: 8 a.m. - noon
Location: Nature Learning Center

July 29-31, 2019
Little Explorers Mini Camp: Dinosaur Train
All aboard! Young dinosaur enthusiasts and nature trackers will love seeing evidence of real dinosaurs and unearthing fun facts about the prehistoric world they lived in through games, crafts, hikes and more! Please register by July 19. Suggested Age: 5-10. Contact: allisoo@clemson.edu or 864-656-0203
Fee: $70
Time: 8 a.m. - noon
Location: Nature Learning Center

The Garden’s Gate • 10
Without question, Spring is an exciting time for gardeners who anxiously await the first signs of plants awakening after months of cold temperatures. The Oconee Bells and Trillium species were among the first to raise their heads in February. Now, on the first weekend of April, there are literally hundreds of plants rousing from sleep along the Natural Heritage Garden Trail and many more yet to come in later months. The sweet perfume of native azaleas (*Rhododendron* genus) and woodland phlox blooms (*Phlox divaricata*) accompany the chorus of migrating birds. Take in the lush hues Virginia Bluebells (*Mertensia virginica*) and the forthcoming pitcher plants (*Sarracenia species*). Awaken your own sense of curiosity and take time to appreciate the intricacies of each plant (from the trail, please). We are fortunate to live in an area so rich in biodiversity. Let’s protect what we have and educate others on making appropriate conservation and sustainable development strategies. Each of our decisions, no matter how small, play an important part in the health of our planet.

~ Allison Kelly
Natural Heritage Garden Manager

Top: Azalea, Phlox, Virginia Bluebells

Left: Catesby’s Trillium, Sarracenia

Right: Celandine Poppy, Star Chickweed

Photos: Allison Kelly & Ed Pivorun
If you walk in the woods during the spring you might be fortunate enough to see something like this strange, Dr. Seuss-like phenomenon. What is this magical spherical thing? In this photo, you can see a leaf poking out of the center, probably not clearly enough to see that it is an oak leaf. This is, in fact, an oak gall a truly intriguing entity. Galls come in all shapes and sizes and can be caused by insects, mites, nematodes or fungi. They can be found in many plants: from goldenrod to witch-hazel to hickories. This one is a the home of a tiny wasp larva, the wool sower gall wasp, *Callirhytis seminator*. The wasp, which overwinters as an adult, lays eggs on the expanding spring leaf tissue of the oak, generally a white oak. As the larva grow, the chemicals they exude interact with the plant to alter its structure and create this fluffy growth.

Oak galls have a fascinating relationship with humans. The tannins in oak galls, when combined with iron sulfite, gum arabic and water, make an ink. Although the reaction between iron sulfite and oak galls was known by Pliny the Elder in the first century A.D., it was not until the end of the late middle ages that oak gall ink superceded carbon-based ink. The Allepo gall, collected from Syria and other middle eastern countries, was the preferred gall for ink making and was used for documents including the Magna Carta, the work of Leonardo DaVinci and the music of Mozart. Oak gall ink was used in the Americas, but in the form of powdered ink imported from Europe and generally not made from local galls.

~ Sue Watts, Educator