Spring ephemerals in Burns Garden

Mountain Lake Echoes

UNIVERSITY of VIRGINIA

Produced by the University of Virginia's Mountain Lake Biological Station **mlbs.org**

Burns Garden: 50 Years of Native Plants on Display

by Henry Wilbur, University of Virginia

Burns Garden was constructed by R. K. Burns in the 1960s and populated with over 100 species of native plants. The garden was neglected from the middle 1980s until 2015 when Henry and Becky Wilbur started to excavate paths, weed, and label plants with the help of species lists and maps of the tree, shrub, and herb layers found in Station files from the early 1980s. Many species have gone extinct; a few have spread outside the fence; and some may be lurking dormant underground waiting for a better time to become green again.

Henry Wilbur leading the charge to rehab Burns Garden in 2012.

The garden has had a life of its own, so specimens are arranged in no particular order, somewhat like you might find them in the forest. Our goal has been to maintain a teaching garden where station residents can learn some of the local flora and their natural history, especially the perennial forest herbs that occur on Salt Pond Mountain. We have tried to remove non-native plants, although interesting species that are native to Virginia, but we have not seen on Salt Pond Mountain, have been allowed to stay. Another very important feature is the 3.5m fence that protects the garden from deer, the local pest that prevents many native species from flowering anywhere on Station land. Last fall, this fence was replaced due to rotten posts and expanded towards the road to add both open-sky and wetland habitats to allow introduction of new species. There are about 175 native species in the garden labelled with their family, genus, and species. This winter, Becky and I have been working on a Field Guide to Burns Garden that devotes one page to each species in the garden. The page includes basic taxonomic and biogeographic information, images captured locally, notes on where to find each species locally, and a natural history sketch based on a literature search for each taxon. *The Flora of Virginia* (2012) by Alan S. Weakley, J. Christopher Ludwig and John F. Townsend (Botanical Research Institute of Texas, Fort Worth) is the nomenclatural authority for this field guide and should be used to learn diagnostic characters of species. The β version of our field guide should be ready by June, but it will be a beta-version for some time. We are seeing "the light at the end of the tunnel" on our long-term project to produce a spatially explicit flora of the station. First, we divided the station into zones based on trails and physical features. We have sampled 82 randomly placed octagons with a radius of 5m using these zones as statistical strata. All of the station outside the perimeter road (Salt Pond Circle), except the pond, should be sampled by the end of the 2018 season. The Field Guide will be expanded to include all species encountered in these plots. We hope these resources enrich the experience of all station residents, provide a resource for the field botany course, and perhaps inspire students to become better naturalists.

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Upcoming Events

Dining Hall Opens
May 14

REU Program
May 24 - July 28

Summer 2017 Courses
Session I: May 22 - June 9
Session II: June 12 - July 7
Session III: July 10 - 28

Summer Seminar Series
Tuesdays and Thursdays
8 p.m. at Lewis Hall Auditorium
Begins May 23

Walton Lecture
The Ecological Context of Local Adaptation: Deciphering Cause and Effect
Joe Travis, Florida State University
June 15

ArtLab
July 2 - 16

July 4th Festivities

ArtLab Lecture
Laurie Hogin, University of Illinois at Urbana-Champaign
July 6

Open House
July 15

View our web calendar for up-to-date announcements.

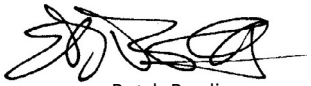
From the Director

In the summer of 2016, MLBS had a long overdue inspection of the fireplaces and chimneys that uncovered a long list of structural and safety problems in virtually every building with a fireplace. Residents of last summer will remember that we had to condemn essentially all the fireplaces on site. I'm happy to report that work is underway this spring to get most of the fireplaces back in action for 2017, due to the hard work of UVA Facilities Management and the team from Black Goose Chimney. Black Goose was the crew that did similar work to renovate the fireplaces and chimneys on The Lawn in Charlottesville several years ago.

The orchestration of this job has been complex. The buildings of MLBS have historic significance, both as a part of the University of Virginia and as a component of the Greater Newport Rural Historic District. All work that takes place on the buildings is overseen and approved by the University's Historical Preservation group in the Office of the Architect, to ensure that repairs do not compromise the character and historic significance of the buildings. We are grateful for the attention, commitment, and substantial investment of Jody Lahendro and Brian Hogg and their partners inside and outside of the University to bring this project into action.

As with most projects that involve important old buildings, every step to repair seems to uncover a series of other glitches that have to be fixed in order to move forward. In the case of the MLBS fireplaces, the charming 1930's construction methods included designs like piled rubble footings under the fireboxes and stacked stone piers that have begun to shift. For several of our cottages, these structural issues have to be righted before we can move forward with chimney repairs. In one cottage, we may have to rebuild the entire chimney stone by stone.

All this is to say please be patient with our progress on repairs. If your favorite cottage has a non-functional fireplace this summer, we are sorry, but hope that everything will be back in action and vastly improved by 2018. In the meantime, a great big thanks is owed to Black Goose, Facilities Management, and the Office of the Architect for recognizing the power of place at MLBS and helping us keep it going.



Butch Brodie

Puerto Rico and Virginia Building Bridges for Science

by Adriana Herrera-Montes, University of Puerto Rico-Rio Piedras

This summer, a lab from University of Puerto Rico-Rio Piedras will join the Mountain Lake community. Assistant Professor Adriana Herrera-Montes will lead the team that will include MLBS REUs Stephanie Collazo Perez and Juan Orengo. Both students are enrolled in the Natural Science program at UPR-RP. Herrera-Montes will research topics related to the emergence of novel ecosystems in the Mountain Lake region using herpetofauna as a model system. The team will focus on the ecology of herpetofaunal novel assemblages, and will initiate a preliminary evaluation of ecosystem services provided by amphibians in the area around the Station. We hope this will be the beginning of a strong and valuable collaboration between both institutions.

Adriana Herrera-Montes

Adriana Herrera-Montes in the field with students from the University of Puerto Rico-Rio Piedras

News & Notes

MLBS Director Receives National Award

Congratulations to Butch Brodie for receiving the Edward O. Wilson Naturalist Award from the American Society of Naturalists. The award is given to an active investigator in mid-career who has made significant contributions to the knowledge of a particular ecosystem or group of organisms. Read more here...

New 3D Printers at Station

Two MakerBot Replicator+ 3D printers will be available to Station users this summer. Printers are fully networked permitting users to submit jobs from their own computers or even phones. A simple photogrammetry apparatus will be set up for 3D image scanning.

Support MLBS

You can support the programs at Mountain Lake Biological Station by donating online. All donations are tax-deductible. Click to give.

ArtLab 2017

This year's ArtLab Lucile Walton Fellow will be Laurie Hogin. Hogin is a painter of fantastical allegorical scenes, mostly including animals, landscapes or still lifes. We look forward to her interpretations of the environment and creatures we know so well. You can read more about Laurie at www.lauriehogin.com and view and interview with her on *YouTube*.

Six other nationally recruited Artists-in-Residence and six UVA art students will join Hogin at MLBS July 2-16. ArtLab work will be featured at the Station Open House July 15th. ArtLab will also feature its writing course again this year from May 22-June 2, Science Writing: Creative Approaches to Biology and Ecology.

Statement from the Artist

I've always been interested in narratives, including fiction, myth, doctrine, history, propaganda, news and politics, ad slogans and song lyrics, nature writing and science stories. They are the documents on which we, as individuals and collectively, make our world, since these documents, combined with personal memories which are mysterious, elusive, often sensory and emotionally inflected, are the only basis for understanding our own existence, including our social and political relationships.

My paintings combine visual, conceptual and material strategies from the history of representational painting with tropes of contemporary visual culture including cinema, comics, cartoons, anime, advertising, fashion, retail and museum display and other narrative, representational strategies. These strategies evoke stories, memories and associations in order to convey states of emotional being and the behaviors that result. Such states represent the inseparability of the emotional, physical, cognitive and psychosocial aspects of lived experience.

Habitat Diorama with Reedy Creek Species
Oil on Canvas, 72" x 72", 2009

My subject matter addresses human attributes and tendencies, including love, pleasure, and desire, as well as trauma, anger, obsession, addiction, violence, and grief. These aspects of human experience and identity, resultant of the interplay of evolutionary biology and language, all find expression in our social and political relationships, and in the schizoid array of material culture, which expresses human cognition, experience, and consciousness. My works are allegories, often political, always cultural. - Laurie Hogin

Field Biology of Insects Back this Summer

by Timothy Forrest

Timothy Forrest, PhD
Professor and Chair of Biology
University of North Carolina at Asheville

I have been teaching Insect Biology for about 20 years and I never get tired of the subject. Each time around it seems that there are always new and exciting discoveries. Every time I get in the field, I see something fun and interesting about this amazing group of animals. We will experience nature first hand by studying perhaps the most important group of animals on the planet. By studying the adaptive features of insects, the course is an exercise in form and function. During the course, students will learn the external and internal anatomy of insects. When comparing insects with what they know about their own bodies, students are amazed at the differences in skeletal and respiratory systems and equally fascinated by the similarities in digestive systems. You will be awed by the intricacies of the head of a fly!

Students always enjoy the camaraderie during the class because it is a shared exploration. This is particularly true for the field component of the course where students gain hands-on instruction about the collection and identification of this small majority.

We will watch and compare the development of crickets, moths and mosquitoes. The class will conduct experiments on insect-plant interactions by comparing insects on milkweed with those on less noxious flowers. During nocturnal forays, we will explore communication by bioluminescent fireflies and acoustically signaling katydids and crickets. We will observe the inner workings of a beehive and investigate how they make foraging decisions. While collecting insects from a variety of habitats, students will understand the ecological diversity of the group. The class will sample aquatic insects and compare their adaptations to oxygen rich, fast flowing streams with those of insects in oxygen poor ponds. We will see immature dragonflies that swim with jet propulsion and that hunt with lightening quick mouthparts. We get to understand the complex interactions of tiny ecosystems that revolve around resources like dung and carcasses. Come have fun rummaging through fields, logs, streams and ponds in search of these incredible creatures. I am looking forward to it.

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2017 Summer Courses *3 Credits*

Summer Session I (May 22 - June 9)

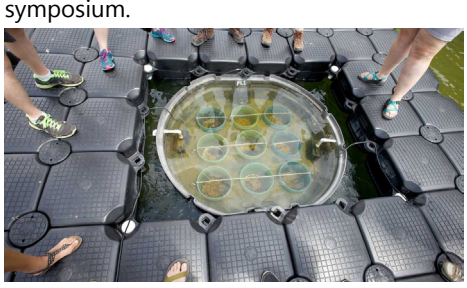
Plant Conservation and Diversity: Bioinformatics, Systematics, and Field Techniques
Zack Murrell, Appalachian State University
The extraordinary diversity of the southern Appalachians will be used to explore the world of plants. We will visit unique mountain habitats to study the different species assemblages in these ecologically wide-ranging sites. Based upon our observations and analyses, we will critique contemporary views of the most effective conservation units (individual, population, species, family, habitat) and the methods used to achieve conservation goals.

Field Herpetology
Christian Cox, Georgia Southern University
We will focus on the ecology and evolution of reptiles and amphibians, leveraging their diversity in the southeastern U.S. In both the field and laboratory, we will study 1) evolutionary relationships among reptiles and amphibians, 2) key evolutionary innovations that characterize each major lineage, 3) reptile and amphibian systems in ecological and evolutionary research, and 4) location and identification of reptiles and amphibians.

Science Writing: Creative Approaches to Biology and Ecology, a short ArtLab Course (May 23 - June 3)
Hannah Rogers, University of Virginia
Writing is fundamental to the practice of science. We write about individual organisms, ecosystems, and patterns, to record our findings and to reach broader audiences. This course will explore a variety of writing styles to make the students better communicators both inside scientific communities and to the public. Students will be inspired by their experience of observing at MLBS and by prominent nature and science writers (e.g. Wordsworth, Oliver, Cole, Thoreau, McPhee, Berry) to create poems, environmental essays, and longer written works.

Summer Session II (June 12 - July 7)

Field Biology of Fishes
David Neely, Tennessee Aquarium
MLBS sits on the Eastern Continental Divide providing an incredible diversity of freshwater habitats. Proficiency in ichthyology will be developed through field trips and lab work. Themes include: fish identification; patterns and drivers of diversity; interactions on individual, population, community, and ecosystem levels; evolution; and influences of human activities. Students will design and conduct a research project and present at a class symposium.



Summer Session III (July 10 - 28)

Field Biology of Insects
Timothy Forrest, University of North Carolina at Asheville
Insects are perhaps the most important animal group on the face of the earth. Their enormous diversity makes them important models for understanding many concepts in biology. Students will observe the bits and pieces of an insect, they will discover how adaptation relates to diversity, and they will learn to identify the major insect groups. Field trips to varied habitats allow students to collect insects and understand their natural history.

Apply Online
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