



2019 Scholars

The Garden Club
of America



2019 GCA Scholars Report

Supporting the Next Horticultural Leaders into the GCA's Second Century

The GCA Scholarship program

continues to attract students who are well on their way to becoming tomorrow's leaders. A great example is 2017 Pollinator Fellow Rachael Bonoan, who recently participated in the Tufts Pollinator Initiative by pitching a successful proposal for a grant that supports the development of a pollinator garden on campus, thereby earning Tufts University a Bee Campus USA distinction.

This year's class of GCA scholars is one of our largest groups, with 73 receiving a scholarship. Urban forestry, pollinator health, coastal wetlands, and native bird habitats continue to be popular topics of study and are also hot trends for this generation of budding scientists. This winter Casey Trees, one of 15 collaborating institutions, received a whopping 77 applications. The resurgence of urban living has created a need for better understanding of how to care for trees, nurture pollinators and birds, and protect the coastal landscape and wildlife in areas of dense population and sea level rise. GCA scholars are leading the way for this research.



Photo by Jane Rogers

Awards to an amazing group of people. Read how these awardees introduce children to the wonders of nature by sharing their knowledge of horticulture and conservation.

In 1929 the GCA's first scholarship award was given to Richard K. Webel by the American Academy of Rome for the Rome Prize in Landscape Architecture. We are so proud to report that former GCA scholars are presidents and CEOs of botanical gardens, professors at colleges and universities, managers of university research labs and herbariums, experts in horticulture, and designers of world-renowned projects in landscape architecture.

Your contributions to scholarship through annual giving or the Second Century Campaign have had an incredible influence on the environment: they directly support the research and work of our outstanding community of scholars—both former and current. It has been an honor to lead the Scholarship Committee the past two years and to witness firsthand the impact of your generosity. Thank you!

Kathy A. Keller

Scholarship Committee 2018–2019

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The Anne S. Chatham Fellowship in Medicinal Botany

Established in 1997 to protect and preserve knowledge about the medicinal use of plants by providing research support in the field of ethnobotany for recent PhDs or PhD candidates, this fellowship is administered by the Missouri Botanical Garden.



Kate Sammons Effect of Ploidy and Genotype on Chemotype in the *Achillea millefolium* L. Complex

Kate Sammons is a PhD candidate in plant and microbial biology at the University of Minnesota in Saint Paul. Her research aims to describe the chemical complexity of medicinal plants with metabolomics using the case study of yarrow (*Achillea millefolium*). *A. millefolium* is a multiploid species complex with broad global distribution and a long history of medicinal use. Sammons is interested in how ploidy and genotype affect chemical composition, as well as broader questions of how high-resolution mass spectrometry can allow a more holistic assessment of the plant's medicinal quality.

Lekeah Durden Development of Laboratory-based Bioassays to Detect Fungal Symbiosis in Morning Glory (*Ipomoea tricolor*)

Lekeah Durden is an Evolution, Ecology, and Behavior PhD candidate in the Department of Biology at Indiana University. Her

research interests include ecological and evolutionary questions about symbiotic interactions. She uses the ornamental morning glory (*Ipomoea tricolor*), Convolvulaceae family, with its fungal symbiont as a system to study co-evolution. By studying the symbiosis, she aims to understand the effects of the plant-fungal partnership and the protective role it has against insect pests and the surrounding plant community. Her prior observations have shown that the partnership provides the plant with benefits against natural enemies, due to the fungal ergot alkaloid products.

Harna Patel Novel Applications of Kombo Butter (*Pycnanthus angolensis*) and its Bioactive Constituents for Human Skin Health

Harna Patel is a PhD candidate in the Department of Plant Biology at Rutgers University. She will investigate novel applications for African indigenous plants to further science and to benefit rural communities that use sustainable environmental practices in producing the ingredients. Patel will be examining new uses for the Kombo plant (*Pycnanthus angolensis*) native to West and Central Africa. It is also known as the African nutmeg and is used in traditional African medicine. Her focus will be on developing applications for human skin health.

The Garden Club of America Summer Scholarship in Field Botany

Established in 2000, this scholarship is for students interested in furthering their knowledge and experience beyond the regular course of study in field botany.

Samuel Kilgore Assessing *Viola* Reintroduction Potential: Investigating Habitat Requirements for Prairie Violets

Sam Kilgore is a master's student studying plant biology and conservation at Northwestern University and the Chicago Botanic Garden. He is investigating the above- and below-ground habitat requirements for *Viola pedatifida*, a species of prairie violet that is often excluded from use in restorations due to low establishment rates. His goal is to increase the diversity of options available to natural area restorations across the Midwest.



Peter Kann Summer Field Sampling of Pitcher Plant

Peter Kann is a master's student at East Carolina University, a public research university in Greenville, NC, studying the evolution of plant-insect relationships. He is researching the flesh fly genus *Fletcherimyia*, which broods its young within the leaves of carnivorous pitcher plants (*Sarracenia*). After traveling across the eastern US collecting fly specimens and cataloging pitcher plants, he will create and compare a phylogeny of the flies and the pitcher plants, seeking signs of co-evolution between them. This research will provide information to help pitcher plant conservation and will shed new light on their natural history.

Matthew Paek Solving the Puzzle of How *Apios* is Pollinated

Matthew Paek is an undergraduate in the School of Forestry and Wildlife Science at Auburn University. He is interested in the pollination ecology of potato bean (*Apios*). This summer

he will serve as a field botanist collecting pollination data on *Apios americana*. He will observe phenology, hand-pollinate, and measure pollen-tube competition for flowers across sites in Alabama. Paek will present his findings at the Southeastern Partners for Plant Conservation Meeting in November 2019.

The Joan K. Hunt and Rachel M. Hunt Summer Scholarship in Field Botany

Established in 2003, this scholarship encourages the study of field botany beyond the regular curriculum, thus promoting the importance of botany to horticulture.

Noah Yawn Atlanta Botanical Garden Student Research

Noah Yawn is a freshman at Auburn University, studying organismal biology with a focus in conservation and biodiversity. At the Atlanta Botanical Garden (ABG) this summer, he will be censusing all known populations of the critically endangered Alabama canebrake pitcher plant (*Sarracenia alabamensis*), analyzing their floral communities, soil analytes, site quality, and conservation priority. Also, Yawn will perform tissue-culture samples on site lineages where canebrake pitcher plants cannot sexually reproduce for genetic safeguarding at the ABG. The resulting datasets from this updated survey will be used to better characterize the species occurrence, locate potential habitat for augmentation, and aid in the conservation strategy of this endangered species.

Thomas Chapin Native Orchid Conservation

Thomas Chapin is a senior studying geography and environmental systems at the University of Maryland.

He will be conducting research at the Smithsonian Environmental Research Center where he will attempt to sequence, isolate, and culture endobacteria (family Burkholderiaceae) from orchid mycorrhizal fungi, collecting root samples from the field for initial isolation and culture. This will aid in efforts to reintroduce endobacteria (which dies out over time) to the Smithsonian's entire collection of orchid mycorrhizal fungi. Mycorrhizal fungi, containing healthy endobacteria, is essential for the germination of many North American orchids.

The Garden Club of America Award in Tropical Botany

Established in 1983 and administered by the World Wildlife Fund's Education for Nature Division, the award supports fieldwork in tropical forests for doctoral candidates in botany.

Megan Sullivan Ecology and Conservation of Tropical Forests in Central Africa: The Ecological Consequences and Long-term Sustainability of Selected Logging in Gabon

Megan Sullivan is a PhD candidate at the Yale School of Forestry and Environmental Studies. Her research uses ecological theory to understand why tropical forests have such high tree species biodiversity. She aims to apply these theories in disturbed ecosystems, where they are understudied. Her project examines seedling regeneration patterns and species functional trait information to understand how selective logging—a low-level, wide-scale, human disturbance—changes which species regenerate and survive in logged forests compared to unlogged forests. Results of this study will contribute to understanding how logging changes the biodiversity and function (e.g.

carbon stock potential or fruit-bearing potential to support wildlife communities) of Afrotropical forests.

Betsabé Castro Escobar On the Trail of the Calabash Trees: Ethnobotany, Domestication, Evolution, and Geography of *Crescentia*

Betsabé Castro Escobar is a 4th year PhD candidate in the Integrative Biology Program at the University of California, Berkeley. She studies the interactions of humans with culturally significant plants in the Caribbean, working currently with a group of plants called the calabash trees in the Tropical Americas. Escobar researches through the lens of ethnobotany, ecology, and evolution, tracing responses of plant-human interface including dispersal, domestication, and documenting the versatility of uses. She is passionate about preserving traditional plant knowledge and is fascinated with how humans have stimulated evolutionary responses in plants. She is an NSF Graduate Fellow, a UC Berkeley Chancellor's Diversity Fellow, and Botany in Action Fellow.



Carly Anderson Stewart Expedition to New Caledonia: Collecting the Cosmopolitan and Speciose Lichen Genus *Cladonia* in a Threatened Hotspot

Carly Anderson Stewart is a PhD candidate studying fungal evolutionary biology at the University of Colorado at Boulder. She is currently studying the biodiversity and biogeography of lichens, specifically the large, cosmopolitan lichen genus *Cladonia* (Cladoniaceae, lichenized Ascomycota). Her work

explores triggers of diversification in the *Cladonia* tree of life asking which characteristics are associated with increases or decreases in diversification. Better understanding shifts in diversification rates would constitute an important step forward in fungal evolutionary biology. Stewart is also interested in large-scale lichen biogeography. Currently, she is working on using phylogenetic trees in combination with geographical data (spatial phylogenetics) to find areas of high diversity or high endemism. Pinpointing areas of high fungal diversity is important to precise protection of species and better informing conservation authorities.



Carrie M. Tribble Evolution and Domestication of the pre-Columbian Crop Plant *Bomarea edulis*

Carrie Tribble is a PhD candidate in the Integrative Biology Department at the University of California, Berkeley. Her research focuses on the evolution of underground parts of plants and on the systematics and diversification of tropical plants, such as the charismatic members of the genus *Bomarea*. She is particularly interested in *B. edulis*, a pre-Columbian plant known for its edible and medicinal root tubers. Tribble hopes to integrate statistical phylogenetic models and ethnobotanical knowledge to better understand the drivers of evolution in this unique plant.

The Garden Club of America Award in Coastal Wetland Studies

Established in 1999 to promote wetland conservation through the support of young scientists in their field work and research, this award is administered by the Center for Coastal Resources Management at the Virginia Institute of Marine Science of the College of William & Mary.



Mary Schoell Reconstructing the History of Salt Marsh Migration to Coastal Forest

Mary Schoell is a master's student at the Yale School of Forestry and Environmental Studies. Her thesis explores how salt marshes migrate inland to higher elevations as a response to sea-level rise and storm events. Her focus is on the coastal forests along Long Island Sound in Connecticut. Due to their resilient nature, forested uplands can slow the process of marsh migration. Using dendrochronology and flood frequency data, Schoell aims to reconstruct the time line of tree stress and death in marsh-bordering forests to understand when and how sea level rise and storm disturbances facilitate marsh migration.

Funded by New Jersey Committee of The Garden Club of America, Zone IV



Ann Holmes
Non-invasive Biodiversity
of Estuarine Wetlands using
Environmental DNA

Ann Holmes is a PhD candidate in ecology at the University of California, Davis. Her research in wetlands uses a noninvasive method called environmental DNA (eDNA) sampling. eDNA is trace genetic material left by fish and aquatic organisms in water. eDNA sampling is a promising new method for surveying biodiversity and detecting endangered or invasive species. She will sample Suisun Marsh, the largest wetland in the San Francisco Estuary, using eDNA and compare results with traditional sampling. The goal of this project is to develop eDNA as a reliable and effective survey method that can inform wetland conservation and management.

David S. De La Mater, III
Effects of Elevated Temperatures
and Eutrophication on Plant-
herbivore Interactions and Impacts
on a Salt Marsh Foundation
Species

David De La Mater is a PhD student in The University Program in Ecology at Duke University Nicholas School of the Environment. He will be conducting manipulative-warming and nutrient-addition experiments in the marshes of coastal North Carolina to address how rising temperatures and eutrophication (excessive richness of nutrients in water) interact to affect herbivory and traits of cordgrass in salt marshes.

Sam Bickley
Assessing the Impact of Coastal
Development on Ecosystem
Function and Structure in Tidal
Creek Fringing Salt Marshes

Sam Bickley, a PhD candidate at Auburn University, will be assessing the impacts of urbanization on coastal streams and fringing salt marsh along the northern Gulf of Mexico. Coastal streams draining developed watersheds experience increased frequency and magnitude of salinity change due to increased freshwater runoff, but the impact on ecosystem structure and function of this altered salinity regime is poorly understood. Bickley's research will examine how ecosystem metabolism, biogeochemical cycling, and resident fish communities in coastal streams and fringing salt marshes respond to this under researched yet widespread disturbance.

The Garden
Club of America
Fellowship
in Ecological
Restoration

Established in 2000 and administered by the University of Wisconsin-Madison Arboretum, this fellowship supports specialized graduate studies and research in ecological restoration, the active healing of land.

Adrienne Ernst
The Effects of Phylogenetic and
Functional Diversity on Invasibility
of Restored Tallgrass Prairie

Adrienne Ernst is a PhD candidate in the Plant Biology and Conservation Department at Northwestern University and Chicago Botanic Garden. She investigates how the diversity sown into a restoration affects the outcomes—focusing on invasion resistance. Standard diversity metrics do not account for species characteristics that may confer invasion resistance. Instead, her

research focuses on phylogenetic and functional diversity, metrics which incorporate species identity. Ernst evaluates these metrics as potential ways to increase invasion resistance in restorations by manipulating native species composition.

Rachel E. Becknell
Determining the Role of Soil
Microbes in the Establishment of
Hard to Establish Plant Species
and the Restoration of Grassland
Communities

Rachel Becknell is a PhD candidate in the Evolution, Ecology, and Population Biology Program at Washington University in St. Louis and performs research at the Missouri Botanical Garden and Tyson Research Center. She is interested in the effects of soil microbes, such as mycorrhizal fungi and fungal pathogens, on the ability for rare and endangered plant species to become established in tallgrass prairie and glade restorations. Becknell will use molecular techniques to assess the impacts of soil microbes from remnant prairies and old fields where tallgrass prairie restorations typically occur on the growth and persistence of four hard-to-establish prairie species.

Christopher Moore
Parasites as Indicators of
Biodiversity in Restored Oyster
Reefs

Christopher Moore is a PhD candidate in the Biology Department at East Carolina University, a public research university in Greenville, NC. He is investigating whether parasite diversity can be used as an indicator of overall biodiversity, particularly in the context of habitat restoration. Parasites that require multiple hosts may be thought of as representing the links between organisms in the environment and “healthy” ecosystems, which are also full of parasites. His project will test how parasite diversity changes across a time-series of previously restored oyster reefs, and whether managers can implement more efficient forms of restoration to maximize the diversity of parasites and their hosts.



Sze Wing Yu
Large-Scale Restoration of the
Northern Great Plains using Bison
as the Keystone Species

Sze Wing Yu is a master's student in the Forestry and Environmental Conservation Department of Clemson University. She will compare riparian vegetation community responses to bison and cattle grazing in the Northern Great Plains of Montana. She will also survey the vegetation in bison wallows and see if species composition changes with time since bison reintroduction. She hopes that her findings will inform the restoration efforts of bison on the landscape.

The Sara
Shallenberger
Brown Garden
Club of America
National Parks
Conservation
Scholarship

Established in 2010 and administered by the Student Conservation Association (SCA), this scholarship encourages college undergraduates, ages 19–20, to pursue careers in conservation by experiencing field training while protecting the treasured resources of America's national parks through the SCA's Apprentice Crew Leader Program.

Kiernan Bartlett
Apprentice Crew Leader, SCA
National Conservation Crew
Program

Kiernan Bartlett will return to Christopher Newport University, Newport News, VA, in fall 2019 after taking a gap year. He will participate in field training and protection of resources at one of America's national parks through the SCA Summer Apprentice Crew Leader Program. A dedicated member of SCA, Bartlett has worked at Fort DuPont National Park, George Washington Memorial Parkway, Kenilworth National Park, and Wolf Trap National Park.

Vinisha Browne
Apprentice Crew Leader, SCA
National Conservation Crew
Program

Vinisha Browne is an undergraduate at Prince George's Community College, majoring in environmental engineering. She will take part in SCA's Summer Apprentice Crew Leader Program at an American national park, learning field training and protection of resources. In summer 2016 she worked in the New Jersey State Park System as a member of SCA's National Crew Program.

The Garden
Club of America
Award in Desert
Studies

Established in 2006 and administered by the Desert Botanical Garden in Phoenix, this award enables graduate or advanced undergraduate students in horticulture, conservation, botany, environmental science, or landscape design relating to arid landscapes to further their studies of the arid environment, with preference given to projects that generate scientifically sound water and plant management.



William Hartman
Denver Botanic Garden

William Hartman is a junior at Oregon State University majoring in horticulture. Building on his background as a full-time firefighter and his research at Denver Botanic Gardens, Hartman will enhance his understanding of desert plant species, particularly those that are fire resistant. For his project, he will design a Firewise® demonstration garden utilizing sustainable native plant species with a thoughtful design to combat the growing threat of wildfires in Colorado.



Lauren Reeves
Desert Botanical Garden

Lauren Reeves is a third-year landscape architecture student at Arizona State University. Working at the Desert Botanical Garden, she will research desert plants to gain understanding of their use in sustainable landscape design. This knowledge will advance her studies on Low Impact Development strategies in the arid environment. She will also use Geographic Information Systems to enhance the Desert Botanical Garden's tree inventory and gain valuable horticultural knowledge about function and care of trees in the desert landscape.

The Garden
Club of America
Scholarship in
Garden History
and Design at
the Archives
of American
Gardens

Established in 2001, this scholarship supports independent study in the field of landscape history and design. Preference is given to students planning to intern at the Smithsonian Archives of American Gardens in Washington, DC.



Haley Steinhilber

Haley Steinhilber is a master's student in the Public History Program at American University. She is interested in the intersection between public history and archives and the role digitization plays in accessibility. This summer at the Archives of American Gardens, Steinhilber will assist with cataloguing materials, developing educational content, and digitizing records.

The Douglas
Dockery Thomas
Fellowship in
Garden History
and Design

Established in 2000 to further the study of history and design in the American garden and also look to the future of gardens and their place in the environment, this fellowship is administered by the Landscape Architecture Foundation.

Lizabeth Wardzinski
A Model for the World,
Tennessee Authority and Postwar
Development

Lizabeth Wardzinski is a PhD candidate in design at North Carolina State University. Wardzinski focuses her research on the Tennessee Valley Authority as a mechanism for shaping areas of the American consciousness as well as the landscape. In her dissertation, Wardzinski hopes to demonstrate how popular notions of conservation and the wilderness were vital to promoting the TVA mission of regional planning and decentralization. Focusing on the cultivation of the tourism industry by the TVA as a development model, Wardzinski contrasts recreational model-planning typologies of the TVA with development models of industrial and residential planning.

The Catherine
H. Beattie
Fellowship in
Conservation
Horticulture

Established in 1983 and administered by the Center for Plant Conservation, a network of 40 botanical gardens in the US and Canada that is headquartered in Escondido,

California, this fellowship promotes the conservation of rare and endangered flora in the southeastern United States by supporting field research by graduate students.



Rachel Ann Lyman
Conservation Genetics of the Tennessee and Virginia State-Endangered Cedar Glade Endemic *Trifolium calcaricum*

Rachel Lyman is a PhD candidate in the Evolution, Ecology, and Population Biology Program at Washington University in St. Louis in conjunction with the Missouri Botanical Garden. Through genetic research and biogeographic analyses, she will assess the genetic diversity in native and reintroduced populations and determine biogeographic forces that gave rise to the endangered endemic *Trifolium calcaricum*. This study will provide important insights for management and conservation.



Gavin Shotts
Understanding Sexual Diversity in Endangered Southeastern *Spigelia* for Improved *ex situ* Conservation

Gavin Shotts is a master's student in biology at Auburn University. His studies focus on how pollination ecology can inform conservation of rare and threatened southeastern flora. His project investigates breeding

traits and mating systems critical to maintaining genetic diversity in both threatened *Spigelia* species. His research will directly inform seed collections for *ex situ* conservation of *Spigelia* through plant propagation and future outplantings. This project will also provide new avenues to integrate pollination ecology into plant conservation efforts throughout the Southeast.

The Katharine M. Grosscup Scholarship in Horticulture

Established in 1981, this scholarship is designed to encourage undergraduate and master's students in the study of horticulture and related fields.

Tyler Morgan Engel

Tyler Engel is an undergraduate at the University of Cincinnati majoring in horticulture. He has returned to college after military service that included two combat tours in Afghanistan. With his favorite classes being soil science and plant nutrition, he is considering a graduate degree in soil science. Engel has grown up loving the outdoors and caring for plants. A professor comments that "he is an intuitive gardener." On a break from school he hiked the Appalachian Trail.

Zachary Fox

Zachary Fox is an undergraduate studying environmental studies and natural history at Hiram College. He works as a land steward at the college's 550-acre James H. Barrow Biological Field Station, establishing a 30-acre native grassland, managing invasive species, and conducting a beech leaf disease monitoring project. He also works as a macroinvertebrate research technician, as well as the caretaker of the college's Teaching, Research, and Environmental Engagement House. Fox plans to earn a master's degree before entering the field of habitat restoration or land management.

Rhiannon Newton

Rhiannon Newton is an undergraduate majoring in horticulture at West Virginia University. She has participated in several projects and internships, including a three-month internship at Plant Delights Nursery & Juniper Level Botanic Gardens in summer 2017 and a six-month internship at Tagawa Greenhouses in spring 2018. Currently, Newton is studying on a semester abroad at The University of Natural Resources and Life Sciences in Vienna, Austria. Her career goal is to own a specialty nursery or greenhouse garnering industry experience to achieve it.



Caleb Walton

Caleb Walton is a senior at Michigan State University pursuing a degree in sustainable and organic horticulture. After completing an internship in plant health care for a landscape company, Walton is now directing his passion for plants and people to the nonprofit sector helping subsistence farmers in developing countries or helping urban families in food deserts within the US through urban agriculture. This summer, he is pursuing opportunities to serve with missionaries working in agricultural development in the Republic of Benin. After his December 2019 graduation he will pursue opportunities in the Peace Corps, Agricorps, or GoCorps.

John Gove

John Gove is an undergraduate student at Michigan State University, majoring in horticultural science with a focus on fruit and vegetable production. Since 2008 he has been farming his own plot of land, growing cherry tomatoes and corn

for popcorn, to help fund his degree. He has designed and implemented an independent study project evaluating different methods of grafting tomatoes. In the summer he interned with an extension agent from the University of New Hampshire, addressing practical grower problems, while also working on the family fruit and vegetable farm. After graduation, his plan is to apply his education to improving and advancing his family's seventh-generation farm. Gove is also an NCAA student athlete.



Mary Macleod

Mary Macleod is a junior studying sustainable plant systems, specializing in horticulture, at the College of Food, Agricultural and Environmental Sciences at The Ohio State University. She assists in strawberry lab research where the yield and quality of everbearing strawberry plants are being tested over different dormancy periods. This summer she will research berry production in California. Macleod intends to pursue a career in greenhouse production of produce, with a focus on public horticulture and making produce accessible to low-income areas.

Robert Hammond

Robert Hammond is a junior at the University of Cincinnati studying horticulture. Native plants and how they interact in the ecosystem are his primary areas of focus. His current independent project is a study of the aster family in which he hopes to discover traits that make certain cultivars more appropriate for Ohio growers. He is also an assistant grower at a local wholesale grower with five acres under glass and is passionate about educating growers about invasive species still being offered for

sale. He would like to earn a master's degree in plant ecology and work at a botanical garden educating the public about the role of plants in a healthy environment.

Marissa Lamp

Marissa Lamp is pursuing a degree in greenhouse management at the Agricultural Technical Institute of The Ohio State University. She managed a local greenhouse on her own through an independent study project with the FFA (Future Farmers of America) organization. Lamp continued her research through her college courses, working at OSU's research greenhouses in Wooster, OH, and independent projects. Last year she won third place in Nursery Operations at the Ohio State FFA Convention and will compete as a finalist again this year. Her passion for horticulture inspires her to eventually own a greenhouse and garden center that focuses on educating the community.

Megan Schafer

Megan Schafer is a student at Cuyahoga Community College pursuing three associate degrees including an Associate of Science in plant science and landscape technology. She was also a member of the National Collegiate Landscape Competition Team and competed in the Irrigation Troubleshooting and Business Management competitions. Schafer placed second overall in the Irrigation Troubleshooting competition. She has also completed personal research on regenerative agriculture and geoengineering. Schafer hopes to transfer to a four-year university. She will pursue a career at a nonprofit organization focusing on reforestation or irrigation in impoverished communities.

The Corliss Knapp Engle Scholarship in Horticulture

Established in 2010 to encourage the development of research, documentation, and teaching skills in the field of horticulture, this scholarship honors the memory of the exceptional and inspiring Corliss Knapp Engle, a long-time member of the Chestnut Hill Garden Club (Zone I). The scholarship is open to undergraduate and graduate students, advanced-degree candidates, and nondegree-seeking applicants above the high school level.

Sean Markovic Plant Growth Regulators

Sean Markovic is a PhD candidate at Colorado State University with a research focus involving plant growth regulator (PGR) applications on herbaceous perennials. His goal is to provide commercial growers of difficult-to-produce herbaceous perennials with improved protocols for stock-plant production and propagation. By using PGR to manipulate plant growth habits, this research has been able to find ways to incorporate PGR applications into the production procedures for herbaceous perennials. The ability to increase vegetative growth and production efficiency has resulted in greater profitability for commercial growers over the past two years.

Kyra Matin Research at Dunedin Botanic Garden in New Zealand with UWBG

Kyra Matin is a master of environmental horticulture candidate in the School of Environmental and Forest Sciences at the University of Washington, Seattle. She will be studying at the Dunedin Botanic Garden on the South Island of New

Zealand to train and conduct research for the continued development of the New Zealand native plant display at the University of Washington Botanic Garden (UWBG). The UWBG has the largest collection of New Zealand native plants outside of New Zealand. She will be involved in seed collecting, cultural research, and evaluating plant selection and care strategies.

Gabriella Hale McNair Scholars Research Program

Gabriella Hale is an undergraduate honors student at Texas Tech University where she is majoring in plant and soil science. As a member of the McNair Scholars Program, she will be designing and constructing controlled-environment plant growth chambers. These chambers will be used to measure the CO₂ gas exchange rates of plants with genetic mutations for their blue light receptor proteins. A recent discovery by Hale's mentor, Dr. Mendu, has concluded that these mutations influence cellulose biosynthesis. Hale hopes her research in plant physiology will help scientists better understand how plants regulate cellulose production on a genetic level.

Gabriela Maria Garcia Stability in Coffee Agroecosystems

Gabriela Maria Garcia is a PhD candidate in biology at Tufts University. In her doctoral research, she employs socio-ecological methods to explore the causes and consequences of yield variability in coffee agroecosystems. Her work will reveal opportunities to promote the stability of small-scale farmer livelihoods in the face of increasing climate variability. She looks forward to sharing her results with both the farming and scientific communities. Garcia has also enjoyed mentoring numerous undergraduate students in interdisciplinary fieldwork.

Alejandra Feliciano Sustainable Urban Horticulture for Ornamental Plants in Private Gardens

Alejandra Feliciano is a PhD candidate in horticulture at

Washington State University. Her research investigates a novel method for creating self-sustaining ornamental planting beds by addressing plant selection from an ecological perspective. She aims to create sustainable seed mixes by selecting species that are predicted to out-compete weed species and will tolerate competition. Aesthetic appeal will be enhanced by selecting species that are both attractive and ecologically adaptable to urban conditions.

The Garden Club of America Hope Goddard Iselin Fellowship in Public Horticulture

Established in 2013 and administered by the American Public Gardens Association, the fellowship furthers the study of public horticulture through experiential learning that takes place at a recognized public garden, botanic garden, or arboretum within the United States.



Michael Bradshaw Epidemiology and Biology of Powdery Mildew on Ornamental Plants

Michael Bradshaw is a PhD candidate studying fungal pathogens at the University of Washington. His dissertation research will include mapping out and evaluating the diversity of fungi within Pacific Northwest botanical gardens. Bradshaw will create a herbarium collection of these fungi and add

them to a genetic database. He also has a keen interest in ornamental horticulture and the substantial economic losses to the industry caused by non-native organisms. Bradshaw's goal is to become a university affiliated garden director or herbarium curator as well as teaching and conducting research.

The Garden Club of America Montine M. Freeman Scholarship in Native Plant Studies

Established in 2017 to encourage the understanding and development of under-utilized native plants, this scholarship is open to college undergraduates and graduate students, advanced degree candidates, or nondegree-seeking applicants above the high school level to encourage the development of research, documentation, and teaching skills in the field of horticulture. It was made possible by utilizing surplus funds from the Montine M. Freeman Medal account and the generosity of the Freeman family.

Rachel Smith Strategic Plan for Native Plant Gardens at State Botanical Garden of Georgia

Rachel Smith is a master's student in the Department of Horticulture at the University of Georgia working on the development and implementation of a strategic plan for native plant gardens with Dr. Jim Affolter at the Mimsie Lanier Center in the State Botanical Garden of Georgia (SBG). The research program aims to learn more about the culture of native plants in urban areas and restoration sites. The goal is to study and discuss the scope of native plant trial programs at other

universities and botanical gardens and to establish partnerships to help develop a similar program at SBG.



Aaron Anderson Listing Native Wildflowers Attractive to Pollinators in the Pacific Northwest

Aaron Anderson is a PhD candidate in horticulture at Oregon State University under the direction of Dr. Gail Langellotto. He is interested in native plant and insect conservation, especially in understanding how to manage urban green spaces as habitat for these species. For his thesis project, Anderson is screening 23 drought-tolerant plant species native to Oregon's Willamette Valley for their attractiveness to beneficial insects (e.g. pollinators, parasitoids, predators), as well as to home gardeners. He is also documenting the bloom duration so that he can suggest landscape designs that provide continuous bloom for pollinators throughout the growing season.

Funded by Mr. and Mrs. Louis M. Freeman, New Orleans Town Gardeners, Zone IX

Adrian Tenney Increasing the Number of Native Gardens and Landscapes in Southern California, Increasing Awareness and Restoring Public Landscapes

Adrian Tenney is a master's student in landscape architecture at California Polytechnic State University, Pomona. Her work focuses on increasing public awareness and understanding of the environmental and financial benefits of using native plants in landscape design. She is developing an educational public workshop series that will demonstrate how to apply native plants to conventional

garden design to encourage ecological sustainability as a shared cultural value in Southern California communities.

Nicole Argueta Creation of a Unique Garden within the San Luis Obispo Botanical Garden that Implements Education on Native Plant Species

Nicole Argueta is a sophomore majoring in environmental management at California Polytechnic State University, San Luis Obispo. The focus of her research project is the development of an educational garden unique to San Luis Obispo Botanical Garden. The garden's footprint will be enhanced by the watershed restoration of a narrow seasonal creek. Educational emphasis will be given to indigenous plants and their medicinal uses. Members from the local Chumash council will serve as advisors to incorporate education about their culture into the botanical garden.

The Garden Club of America and Royal Horticultural Society Interchange Fellowships

Established in 1948, these two fellowships provide for a reciprocal exchange of British and American students in horticulture, landscape architecture, and related fields to study and intern in each other's country for one year.

The Royal Horticultural Society Interchange Fellow

John Nix

John Nix graduated this spring from North Carolina State University with a BS in horticultural science and plant biology. He has worked in the Mountain Crop Improvement Lab under Dr. Tom Ranney and has two independent projects in blueberry genetics, working with the Genomics Lab at NC State. His interest in horticulture began with the Future Farmers of America in high school, and includes plant breeding, tracing, and public horticulture. This summer he will have a specially designed internship at Longwood Gardens before his Interchange Fellowship begins. As the RHS Interchange Fellow, Nix plans to continue studying ornamental horticulture and to further develop his skills as a researcher, educator, and plantsman.

The Garden Club of America Interchange Fellows

Henry McBeath

Henry McBeath will be at Longwood Gardens for the 2019 GCA Interchange Fellowship year. He decided to pursue horticulture seriously in 2016. McBeath was accepted by the MacRobert Trust and Royal Botanic Gardens, Edinburgh, where he earned the Level 2 Certificate in Practical Horticulture and the Level 2 Certificate in Principles of Horticulture. He was a garden intern at Inverewe Garden where he took various plant identification tests and learned impressive skills such as mastery of heavy machinery and propagation in all its forms including from delicate cuttings.

Kathryn Bray

Kathryn Bray is going to Longwood Gardens for the 2019 GCA Interchange Fellowship year. In 2014 she received a BS with honors at Bournemouth University and since then her history of garden placements is impressive. It includes Sir Harold Hillier Gardens and the Cambridge University Botanic Gardens, where she earned a Level 4 Certificate of High Education in Practical Horticulture and Plantsmanship. She is currently completing the rigorous Diploma in Horticulture Course at Royal Botanic Gardens, Kew, where she runs the Kew Mutual Improvement Society, a series of lectures she coordinates and introduces. Bray has a number of published articles and has strong public speaking and writing skills.

The Rome Prize Fellowship in Landscape Architecture

Established in 1928, this fellowship provides American landscape architects the opportunity for advanced study at the American Academy in Rome.



Dr. Kate Thomas Nymphaeums, Grottos and the 'Pink Lily': Lesbian Gardens in fin-de-siècle Italy

Dr. Kate Thomas is the K. Laurence Stapleton Professor of English at Bryn Mawr College. She holds a master's degree from Cornell University and a PhD from University of Oxford. Her project will focus on the sensory qualities of the garden, including

vistas, textures, and sounds, and exploring how a body might move through the space. She says, "this project allows me to turn my literary study to the material and botanical, a gesture newly understood in my field as attention to 'vibrant matter,'" appreciated by authors over a century ago to be particularly enabled by the Italian culture. Her study will concentrate on Villa Gamberaia, near Florence. She intends to publish both an article and a book following her residency.

The Frances M. Peacock Scholarship for Native Bird Habitat

Established in 1994 and administered by the Cornell Lab of Ornithology in Ithaca, NY, the scholarship is awarded to college seniors and graduate students for the study of habitat-related issues that will benefit threatened or endangered bird species and inform land management decisions.



Kathryn Grabenstein An Experimental Assessment of How Urban Green Spaces Alter Species Interactions

Kathryn Grabenstein is a PhD candidate at the University of Colorado, Boulder. Overall, her work explores the patterns that urban green spaces appear to change. Combining field studies and genomic approaches, Grabenstein investigates how gardens and backyards modify the interactions between chickadees to promote

hybridization. She is also establishing a long-term study titled the Boulder Chickadee Study, as an experimental framework to address this question. Results from this work will provide insight into how the interactions between species are altered in a rapidly changing world.



Spencer Keyser Impacts of Climate-Mediated Mangrove Expansion on Avian Community Structure and Food Web Dynamics

Spencer Keyser is a master's student at the University of Texas Marine Science Institute. Using regional long-term data sets combined with local field surveys, he will investigate how climate-driven changes in coastal vegetation (i.e. marsh-mangrove shifts) will impact bird community composition and food web interactions across the Gulf of Mexico. Keyser believes understanding how climate and vegetation shifts impact bird assemblages is crucial to conserving and predicting changes in current avian biodiversity across the Gulf of Mexico.



Joshua Driscoll Characterizing Habitat on Breeding and Non-breeding Grounds for Eastern Whip-poor-will

Joshua Driscoll is an undergraduate student at Worcester Polytechnic Institute. Driscoll's research will utilize GPS trackers to monitor

the migratory path of the eastern whip-poor-will, identifying where the species spends the winter. The winter habitat will then be compared to the breeding grounds using ArcGIS. This information will help identify specific habitat requirements needed for whip-poor-wills so that conservation management plans can be established.

The Garden Club of America Board of Associates Centennial Pollinator Fellowship

Established in the spring of 2013 and administered by the Pollinator Partnership, this fellowship supports one or more graduate students to advance the knowledge of pollinator science. It was made possible by generous gifts given in honor of the GCA Centennial by members of the Board of Associates.



Aramee Diethelm Pollinator Survival and Water Stress: Effects of Plant Chemistry on Pollinator-predator Interactions

Aramee Diethelm is a PhD candidate studying plant-insect-predator interactions at the University of Nevada, Reno. She is interested in how variation in plant chemistry impacts herbivore survival. Her project investigates how milkweed (*Asclepias*) chemical traits alter the interactions between western monarchs (*Danaus plexippus*) and their predators across a rainfall gradient. By exclusively consuming milkweed, monarchs are toxic to some

predators. However, the chemistry differences within milkweeds as well as the health of the plant impact monarch survival. Diethelm will research how drought stress interacts with plant chemistry, which may impact monarch survival. Her research will aide monarch conservation across the arid West.

Hannah Levenson **Qualifying the Disease Ecology** **across Pollinator Communities as a** **Result of Planted Pollinator Plants**

Hannah Levenson is a PhD candidate in the Department of Entomology and Plant Pathology at North Carolina State University with co-majors in entomology/biology and ecology/evolution. Levenson is conducting a multi-year survey of the native bee populations across North Carolina and assessing how planted habitat affects these populations over time. Her study utilizes previously established pollinator plots to test a range of pollinator species for disease presence and quantity. She measures the presence and infection level of several different pathogens across many bee species found at the sites. This study will be the most detailed survey of native bees in North Carolina to date and will aid in making future conservation decisions.

Funded by North Suffolk Garden Club, Zone III



Jacob Pacenka **Assessing Bumble Bee Health in** **Indiana Agroecosystems**

Jacob Pecenka is an entomology PhD candidate at Purdue University in Indiana. His research is centered in agroecology and how current management practices used to control pests may negatively impact pollinators. Using large-scale research

plots across Indiana, he will look at how removing conventional insecticide applications to adjacent cropping systems can affect the pollinator community and the ecosystem benefits that they provide. Emphasis will be placed on both managed and wild pollinators to fully understand their community dynamics and contributions to crop yield.

The Clara Carter **Higgins Summer** **Environmental** **Studies** **Scholarship**

Established in 1964 to encourage college students to further their studies and careers in the field of ecology, this scholarship offers opportunities to gain knowledge and experience beyond the regular curriculum.



Nyika Campbell **Independent Research at University** **of Colorado Mount Research** **Station on Niwot Ridge**

Nyika Campbell is an undergraduate at the University of Colorado, Boulder majoring in ecology and evolutionary biology. Her interests are plant biology and population ecology. This summer she is undertaking a manipulative field study in Colorado's Front Range to examine how changing climate conditions affect alpine plants. Her work specifically examines the seedling germination rate of the alpine flower (*Geum rossii*) in response to warmer weather and early snowmelt across community types. This work will provide an improved ability to predict how plant populations will be affected

by climate change across complex landscapes.

Kristen Rabbitt **Research at the Richard B. Gump** **Field Station in Mo'orea, French** **Polynesia**

Kristen Rabbitt is an undergraduate at Rice University in Houston majoring in ecology and evolutionary biology. For the past year, she has been part of a team working to establish protocols for the analysis of symbiotic algae in the stomach contents of fish. This summer, she will be working in Mo'orea, French Polynesia, to research the potential for coral-eating fish to disperse an important coral-associated algae. Her research will help contribute to our understanding of coral reef fish and the role they play in coral reef resilience.

The Garden **Club of America** **Awards for** **Summer** **Environmental** **Studies**

Established in 1993, this scholarship encourages undergraduate summer studies in fieldwork, research, or classroom work in environmental studies beyond the regular curriculum.



Samia Shell **Middlebury School of the** **Environment Study Abroad Program**

Samia Shell is a sophomore at St. John's University in Queens, NY, with a double major in environmental science and French. This summer, she will travel to

China with the Middlebury School of the Environment to conduct field research in sustainability, biological conservation, and pollution monitoring, using a case-study method to examine the local environment. The goal of her studies is to investigate these conservation issues on temporal and spatial scales, using interdisciplinary scientific and humanitarian perspectives along with ethics to better address their historical, cultural, and economic context.

Co-funded by Garden Club of Darien and Fairfield Garden Club, Zone II

Stacy Horton **Purdue University's Brazil Abroad**

Stacy Horton is a sophomore attending Vanderbilt University majoring in Latin American studies and cinema and media arts with minors in sociology and anthropology. She will be attending a three-week field course in Brazil living with an indigenous group, the Kayapó. Horton will learn from members of the Protected Forest Association, conservation biologists, and non-governmental organization workers about what obstacles and opportunities lie ahead for sustainable Amazonian livelihoods. Additionally, she will learn ethnographic field methods and draw upon film studies to co-create several short films.

Alison Moss **Metabolic Characterization of the** **Gut Microbiome of Dung Beetle** **Onthophagus Taurus**

Alison Moss is a budding microbial ecologist entering her final year at Towson University in Maryland. For the last year, she has studied the metabolic abilities of bacteria isolated from the bull-headed dung beetle gut. Like humans, dung beetles host symbiotic microbes that may aid in digestion. Commonly found on dairy farms, dung beetles minimize the environmental impact of raising cattle by consuming and redistributing waste. Investigating the abilities of dung beetle microbiome members will increase our understanding of how microbes regulate agricultural waste, helping to predict how disturbances—

such as climate change or veterinary antibiotics—may influence this important dynamic.

Funded by Green Spring Valley Garden Club, Zone VI

Damon Leach **Occupancy Modeling of Bumblebees and Citizen Surveys**

Damon Leach is a junior majoring in statistics with a minor in biology at the University of Minnesota, Twin Cities. He will be working as an assistant at the Cariveau Native Bee Lab utilizing both of his study areas. This summer's research will combine fieldwork with citizen sightings of bumblebees with the goal of creating more efficient methods of bee population estimates based on detection probabilities. This research will provide better information regarding locations of different types of bumblebees and help inform management policy.



Jessica Sales **Costa Rica Summer Research**

Jessica Sales is a junior majoring in industrial engineering with a minor in alternative energy and sustainability at Robert Morris University. She will be studying regions in Costa Rica that face a critical environmental challenge. Her research endeavors will focus on the intricate intersections of conservation, climate change, economic development, and ecosystem function. In order to facilitate this research, she will be immersed in the local community to learn from citizens' perceptions of sustainability. Her research results will provide critical data that will contribute to Costa Rica's sustainable development.

Funded by The Trowel Club, Zone VI

Jason Dean Robinson **Summer Research in Plant Ecology**

Jason Dean Robinson is an undergraduate at the College of William and Mary studying biology and plant ecology. Working with the Milkweed Conservation Lab led by Dr. Harmony Dagleish this summer, he will research the potential mutualism relationship between the longhorn milkweed beetle (*Tetraopes tetraphthalmus*) and the common milkweed plant (*Asclepias syriaca*). The longhorn beetle is known to be parasitic to the milkweed plant, eating the plant's roots. There may be evidence, however, that the presence of the beetle changes the plant's nectar chemistry, increasing its attractiveness to essential pollinators. Robinson's goal in studying this relationship is to increase the efficiency of milkweed plant conservation efforts.

Funded by Amateur Gardeners Club, Zone VI

The Mary T. Carothers **Summer Environmental Studies Scholarship**

Established in 2005, this scholarship is for undergraduate students who are doing summer fieldwork, research, or classroom work beyond their regular curriculum.



Autum Auxier **Marine Hope Conservancy**

Autum Auxier is a junior concentrating in zoology at Ball

State University, Muncie, IN. She will participate in a marine biology summer research program aimed at converting Algoa Bay, South Africa, into a Marine Protected Area. Auxier will collect gut samples from various species through the trophic levels for marine plastic analysis. Her work will include deploying and analyzing the footage from Baited Remote Underwater Videos, participating in marine stranding surveys, and attaching GPS trackers to adult African penguins. Her data will be combined with many other projects having similar goals.



Gabriella Ross **Wildlife Management and Human Environment Interactions**

Gabby Ross is a sophomore at the University of Tampa. This summer she will spend a month in the Serengeti with The School for Field Studies, an independent study abroad organization, where she will focus on the biophysical and socio-cultural influences on the ecosystems of Tanzania. She will record animal behaviors, wildlife consensus data, and various quantitative/qualitative observations that will augment The School for Field Studies' ongoing research. Her goal is to determine how to effectively use natural resources and sustainable practices to benefit both the economies of the local communities and the conservation of the region's wildlife.

Funded by MAM-NWJ Foundation, Inc.

Jane Williams **Volcanoes of Eastern Sierra Nevada**

Jane Williams is a freshman at Indiana University studying environmental management. This summer she will be

attending a course titled "Volcanoes of the Eastern Sierra Nevada" where she will be studying the geology, natural history, and biodiversity of the Sierra Nevada mountain chain in eastern California. She will be conducting field work and designing a research project during her time in the mountains, after which she will submit a research paper. Furthering her understanding of plant life in the area, this course will also contribute to Williams's research on campus in an environmental science lab.

The Elizabeth Gardner Norweb Environmental Studies Scholarship

Established in 2005, this scholarship encourages undergraduate summer studies doing fieldwork, research, or classroom work in environmental studies beyond the regular curriculum.

Simone Evans **Research Experiences for Undergraduates/Smithsonian Center**

Simone Evans is a freshman at the University of Maryland who has been studying orchids and their fungal partners at the Smithsonian Environmental Research Center. This summer she will focus on hybrid orchids using genetic markers to identify their fertility. She will also isolate and sequence fungi from the roots of the hybrid orchids and the parent species to identify whether the hybrid's fungi are more similar to one parent. Understanding that orchid distribution and viability rely heavily on the fungi available, Evans will compare the geographic distribution of the hybrids and their parent species to their fungal signature.

Adele Woodmansee **Independent Thesis Research in** **Oaxaca, Mexico**

Adele Woodmansee is a senior at Harvard University. She is a double major student in integrative biology and social anthropology with a minor in Latin studies. For the past three years she has been researching maize agriculture in a Zapotec community in southern Mexico. Woodmansee is conducting a genetic study for transgenic contamination in combination with ethnographic research on seed saving practices, the role of subsistence agriculture in family economies, and local ideas around contamination and chemical use. This summer she will return to Oaxaca to complete final fieldwork and present results of her genetic research to the community.



Samuel Flett **Wildlife Health Immersion** **in Africa: Ecology, Capture,** **Rehabilitation and Forensics**

Samuel Flett is a junior majoring in wildlife conservation at Virginia Polytechnic Institute and State University. This summer he will study in Chobe National Park, Botswana, conducting international field research and data collection in ecology, wildlife capture, rehabilitation, and forensics. The research will focus on discovering creative solutions to critical social problems emergent from human activity and environmental change, specifically in areas including water systems, rural environments, wildlife conservation, and infectious disease.

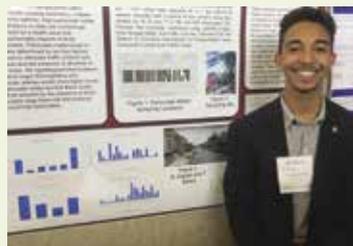
The Garden Club **of America Zone** **VI Fellowship in** **Urban Forestry**

Established in 2005 for advanced undergraduate or graduate students to study urban forestry and related subjects, this fellowship is administered by the GCA in collaboration with Casey Trees, Washington, DC.

Avery Williams **Using High-resolution Satellite** **Data to Track Phenological Shifts** **of Urban Vegetation for Individual** **Tree Scale Analyses**

Avery Williams will be a master's student in environmental science at American University in August 2019. Her research will use high-resolution satellite data to track phenological shifts of vegetation over downtown Washington, DC. This study will examine how flowering fluctuates from cold and warm years while evaluating these changes on an individual-response level based on species and site variability. Monitoring the phenological shifts via satellite images may allow a better understanding of vegetation response to climate change.

Funded by Casey Trees,
Washington, DC, Zone VI



Elijah Catalan **Access to Wilderness in** **Washington, DC**

Elijah Catalan is a junior at Howard University working toward a BS in biology and a BA in environmental studies. Trees and wilderness are known to improve the health and

economic welfare of communities. His research investigates the relationships between the racial and economic demographics of Washington, DC, to the distance from parks and tree cover in the metropolitan area. His goal is to determine whether DC communities have unequal access to green spaces due to socioeconomic status thereby providing data to advocate for more inclusive urban planning.

Funded by Casey Trees,
Washington, DC, Zone VI

Brooke Saba McDowell **Urban Forestry and the Effect on** **Longevity**

Brooke Saba McDowell is a master's student in gerontology at Virginia Commonwealth University, Richmond, VA. She will research how the existence or absence of trees in the urban environment impacts older adults including effects on their health, wellness, and longevity. The data will be analyzed for themes. Conclusions and recommendations will be shared with community members and organizations.

Funded by Casey Trees,
Washington, DC, Zone VI

Erica McCormick **Modeling the Effect of Urbanization** **on Trees in Riparian Settings**

Erica McCormick is an undergraduate at the University of Texas, Austin. Her project seeks to analyze the effects of urbanization on large riparian trees in Austin by deploying hand-built sensor packages at multiple tree heights. These sensors will measure variables such as soil moisture, sap flow, rain penetration, leaf-area index, and branch movement from wind. She will combine this information with meteorological and streamflow data to build and test computer models of how urbanization changes riparian ecosystems and the trees that live there.

The Elizabeth **Abernathy Hull** **Awards**

In addition to announcing its scholarships, the GCA, through this national award, recognizes individuals who work with children under 16 to inspire "their appreciation of the beauty and fragility of our planet." Awardees are proposed by a GCA club or club member.

Carol Burton **Houston, TX**

Proposed by Doris Heard, The Garden Club of Houston, Zone IX
Carol Burton began volunteering for Urban Harvest 20 years ago and is now director of youth education. She currently oversees the garden and nutrition classes for 22 schools, impacting children aged 4–14 from all over greater Houston. Urban Harvest is a nonprofit organization with three programs: community gardens, farmers market, and youth education. Over the last 15 years Burton has greatly enlarged her job to include training garden educators and project managers who help develop edible gardens. Eighty percent of the schools with an edible garden are Title 1 schools where nearly 100 percent of the students are receiving free breakfast, lunch and now from the garden, dinner.



Regina DiStefano
Tarrytown, NY

Proposed by Anne Myers, Garden Club of Irvington-on-Hudson, Zone III

As the lower school science teacher at Hackley School in Tarrytown, NY, for the past 14 years, Regina DiStefano works with children in Grades K–4 teaching subjects such as earth science, ecology, biology, and living organisms. She also collaborates with middle- and upper-school students to document the ecology of the extensive forest surrounding the campus. Her lower-school students help by maintaining salamander count, identifying plants and animals, and assisting with trail clean up and restoration. In 2014 she initiated a lower-school project to plant a vegetable and herb garden to attract pollinators that has become a focus of the lower-school curriculum and a source of pride for the students. DiStefano also teaches popular after-school and summer classes.



Amy Jagodnik
Washington, DC

Proposed by Natalia Jagannathan and Janet Lindgren, The Trowel Club, Zone VI

When Amy Jagodnik's children were students at Horace Mann Elementary School in Washington, DC, she volunteered to cultivate school partnerships with DC Greens, Shelburne Farms and Center for Ecoliteracy. As the School Improvement Team Chairperson, she directed numerous sustainable and green initiatives that resulted in the school's 2017 Gold LEED certification. In 2010 the school hired Jagodnik to be the garden coordinator at Horace Mann Elementary School with a population of over 400 students ages 4–12. She has developed a year-round school garden program with 16 tower gardens, seven beehives, a developing fruit orchard, and egg-laying hens plus chicks. Twice weekly she teaches the youngest students in the garden. Middle-school classes focus on food production, healthy eating, and waste management. The executive director of Casey Trees noted in his letter of recommendation that Jagodnik organized an event for 400 students emphasizing the importance of trees, and in 2017 she was recognized with Casey Tree's Canopy Award for Education.

Funded by Lorill Haynes, Trustees' Garden Club, Zone VIII

Kellie Karavias
Houston, TX

Proposed by Doris Heard, The Garden Club of Houston, Zone IX

Kellie Karavias is the Culinary Arts Educator at Gregory-Lincoln Education Center in the historic Fourth Ward near downtown

Houston, with an enrollment of nearly 700 primarily low-income students ages 4–14. Employed by Urban Harvest, she is also the founder of the Cultivated Classroom where students learn about food by working in the garden, caring for chickens, picking fruits from the orchard, and preparing these foods in the kitchen classroom. Cultivating their minds and bodies, Karavias's students know where their food comes from because they sow it, grow it, share it, and eat it. She initiated a unique program working with a local grocery store to create a Kids Market. There, students are responsible for marketing, display, pricing, and selling the food they grow. Karavias observes that, "the school garden melts barriers and changes everything. It is a safe place for them to be themselves."



Jackie Kondal
Summit, NJ

Proposed by Mary Lewis, Garden Club of Madison, Zone IV, and Mary Kent, Plainfield Garden Club, Zone IV

Jackie Kondal is the director of children's education at Reeves-Reed Arboretum in Summit, NJ. During the ten years she has held this position, over 10,000 students have participated in the "Hands to Nature" program for children ages three and up. Each year, Garden Club of Madison funds field trips for students from Newark, NJ, who otherwise might not be exposed to natural habitats. To prepare students, Kondal travels to the Newark schools beforehand to describe their upcoming Reeves adventure. When they arrive at the arboretum, she guides them in hands-on activities to teach appreciation of nature. She

also develops all children's activities for special events such as Daffodil Day and Celebrate Fall. She now has a staff of three to help support these very popular programs.



Victoria McMillan
Cleveland, OH

Proposed by Robin Schachat, Shaker Lakes Garden Club, Zone X

Victoria (Torrey) McMillan is the director of the Center for Sustainability at Hathaway Brown School in Cleveland, the oldest continuously operating college preparatory school for girls in Ohio. She is a mentor to these young girls, setting an example by running marathons, participating in triathlons, and being the only female contestant in a 700-mile kayak race. She tirelessly advocates for youth environmental education in the community. As director she understands that teaching the teachers will bring awareness to more students, but her personal focus is lower and middle schoolers. On campus, she and her students designed and built a bird sanctuary, which is incorporated in many educational lessons. Her goal is to enhance her students' appreciation of the natural world so they can act to help save it.



Nina Miller Darien, CT

Proposed by Susan Brewer and Danielle Granath, Garden Club of Darien, Zone II

Nina Miller has been involved with The Darien Nature Center since 1992. Originally a volunteer, she became a member of the program staff 15 years ago, leading all pre-school program activities. Her imprint in the community is legendary. She has a singular ability to connect with children, knowing how to teach so that they both engage and remember what they have learned. Among the many activities she has developed and taught are Babes in the Woods, Nature Time for two-year-olds, Knee High to Nature for threes, Critters and Kids, Nature's Playroom, and Story Time with the Animals. Miller also directs a seven-week summer camp for two- and three-year-olds. Her after school program is called Animal Caretakers Club geared for children in Grades 2–6. She also leads elementary school students on environmental tours at the Nature Center and other public parks. The executive director of the Darien Nature Center said “the world is better because of Nina and our environment has a fierce advocate for protection.”

Funded by Sasqua Garden Club, Zone II

Elizabeth Minott Northeast Harbor, ME

Proposed by Eleanor Andrews, Garden Club of Mount Desert, Zone I

Betsy Minott is the garden coordinator and education technician in the Mount Desert Island School in Maine, working with all students ages 5–14. Examples of her innovative programs include

harvesting potatoes and graphing favorite ways to eat them (Grades 1 and 2), and creating seed-to-table salsa recipes in Grade 7 Spanish class. She taught Grade 3 science classes inherited traits by growing five different lettuce seedlings. In 2015, The Garden Club of Mount Desert and the town funded a greenhouse to engage students in hands-on food growing to support community connections to nature, sustainability, healthy choices, and food security. Minott created the greenhouse's programming and according to the principal, “the results are magical.”

Funded by Ridgefield Garden Club, Zone II

Kathy Sapienza Bath, OH

Proposed by Ann Hubiak, Akron Garden Club, Zone X

Kathy Sapienza works at Old Trail School, an independent day school in Bath, OH, for students in pre-K–8. She successfully implemented a cross-disciplinary edible education program teaching the concept of planting the “Three Sisters,” incorporating history, horticulture, and environmental stewardship. She has established four hives and set up a “Farm Hands-on” elective for students in Grades 6–8. The food the students produce is served in the school dining room almost every day. The curriculum also includes working with children in Grades 3–5 on raised garden beds, tapping maple trees, and harvesting syrup. Last year, middle schoolers harvested and cultivated organic cotton. Next year they plan to replant cotton using the seeds they saved and also to start a dye garden with flowers, roots, and berries.

Funded by Julie Johnson, Little Garden Club of Columbus, Zone X

Sue Schoenfeld Rumson, NJ

Proposed by Gwendolyn Wisely, Rumson Garden Club, Zone IV

Sue Schoenfeld has been a third-grade teacher for over 23 years. She has also served as garden club advisor at The Deane Porter School in Rumson,

NJ, for the past 15 years, teaching children ages 7–9. In 2003 working with the Rumson Garden Club, Sue created a monarch butterfly garden in the courtyard of the school. She taught the children the importance of the role monarchs play in our ecosystems. As the program grew, she arranged trips for students and their parents to Mexico to take part in the Monarch Watch. Upon their return, students would share their experiences. Schoenfeld also pioneered the school's recycling program by inviting the senior director of Monmouth County's recycling department to speak to third graders as well as guiding field trips to the recycling center.

Laura & Shawn Sears San Francisco, CA

Proposed by Karen Gilhuly and Abigail Wilder, Woodside-Atherton Garden Club, Zone XII

Laura and Shawn Sears founded a free residential outdoor education program called Vida Verde Nature Education in 2001. Since then, the three-day, nonprofit, outdoor education camp has positively impacted 11,000 inner-city students ages 10–12 who come from under-resourced schools and have no access to outdoor learning programs. During the school year, fifth graders camp for two nights in Northern California and participate in many activities, such as milking goats, walking silently through the forest, and harvesting vegetables from the organic garden, which is used to prepare their dinner. Students also visit the coastline exploring sea life along the shore and splashing in the ocean. This hands-on science education and team-building program is life changing for the children. These outdoor experiences provide low-income students with an introduction to the wonders of nature, as well as a respite from their daily routines. Laura Sears says, “Camp is magic.”

Funded by Julie Johnson, Little Garden Club of Columbus, Zone X, in honor of Gina Brandt, Hancock Park Garden Club, Zone XII

Norma Simmons Little Rock, AR

Proposed by Rebecca Smith, Little Rock Garden Club, Zone IX

Norma Simmons started the ACCESS garden in 2003, a nonprofit program offering full-time education, therapy, and training for children with developmental disabilities. The students, ages 7–16, grow a variety of flowers, fruits, herbs, and vegetables from cuttings, seeds, and small plugs. Then they host garden sales for the school and community, while learning customer service skills, reading, writing, use of currency, and math. The raised beds in the 3,364-square-foot greenhouse make gardening more accessible for these special-needs students who would otherwise not be able to experience horticulture and caring for plants. Making worm tea is another popular activity. The HydroCycle Vertical System, which Simmons initiated five years ago, is also accessible by all, rewarding the student gardeners with plants growing 30–50 percent faster than traditional growing methods.

Maggie Tuohy Maplewood, NJ

Proposed by Laura Gilkey and Jane Conrad, Garden Club of the Oranges, Zone IV

Maggie Tuohy is the garden instructor at Seth Boyden Demonstration School, a Title 1 kindergarten to fifth grade school in Maplewood, NJ. A Master Gardener and former volunteer, she is now a faculty member working to align the school's garden and outdoor experience programs with the New Jersey state curriculum. The Outdoor Learning Center, which she helped develop, includes the Strawberry Fields teaching garden, a habitat garden, and a native arboretum. Every grade level has a garden bed to plan, plant, and maintain through which students learn math, history, and language arts. On garden walks in the rain, students also learn to hear the differences in the sounds on rainy versus dry days. Tuohy has empowered thousands of students to appreciate and interact with nature.