From the President
Cindy Walkenbach, Volunteer President

“Volunteering is the ultimate exercise in democracy. You vote in elections once a year, but when you volunteer, you vote every day about the kind of community you want to live in.”
—Author Unknown

The quote above that introduces my monthly comments seems especially poignant as we have said good-bye to two long-time volunteers, Marilee Scaff and Ruth Henzie. Each lady contributed immensely over many years to the quality of our Garden in important ways and to the betterment of our community. Ruth, as a long-time elementary teacher and 30-year volunteer in many Garden positions, most recently as a stalwart in the gift shop, and Marilee, as perhaps Claremont’s most ardent supporter and activist who was a nature interpreter and an inspiration to many of us for sharing her incredible knowledge of the Garden flora. I last spoke with her when she and her family attended an event to kick off the Forest Pavilion campaign. Ever engaging and articulate at age 103, she was so pleased to be able to add her name to the list of those contributing significant gifts to build the Pavilion. This very special place will be a lasting memorial to her.

The Volunteer Board had discussed a gift to the Forest Pavilion campaign over the last couple months and voted in March to recommend a pledge of $25,000 to name the space now called the Gathering Circle for School Children. At our Quarterly business meeting, the Organization approved that commitment and voted to contribute $2,500 from the Volunteer Discretionary Fund. We will also be hosting a fundraiser at Panera Bread in Upland on May 9, so watch your email for more details. I am happy to tell you that in a show of incredible support, generous volunteers have already made significant gifts and pledges to date; and we are well on our way to fulfilling our goal! I hope many of you will join your colleagues at whatever level you feel comfortable giving. Karina Chappell in Advancement can provide information for you on how to help. All gifts are very much appreciated!
Winter into Spring, 2019

Having recently lost three very long serving volunteers—Mary Pierson, Ruth Henzie, Marilee Scaff—I am keenly aware of how valued and valuable each and every one of you is to our Garden community. But of course, there is much more to it than that: many staff come to know many of our volunteers quite well and to regard them as special friends (and vice versa). Whenever I am about to circulate sad news items to our Garden community, I think of retired or otherwise departed staff who would want to know. And beyond personal friendships, I am also reminded of how special our community is here at RSABG. I should say communities because our volunteer group has a community culture that, although inspired by and consistent with the values of RSABG, is uniquely that of an entity composed of dedicated volunteers who care deeply about where they volunteer. As individuals and as a highly distinctive community, the commitment that you have to RSABG is very real and is mirrored in all that you do. As I think about it, RSABG volunteers are so intricately involved in the organization that it is hard to contemplate our Garden without you! Happily, in the way of life, new volunteers come along and, without ever replacing those who have gone before, these newcomers take their own place in the volunteer ranks and the community is sustained.

Spring! Our cold, wet winter has not let go of us yet (and I, for one, am happy about that: let us keep things cool and damp as long as we can—we all know what summer brings) but the days are longer and we’ve had at least a few sunny warm days. My feeling is that our Garden is about three weeks behind in terms of typical flowering times. I am hoping for a long flower-filled spring, which may well happen if it generally stays cool. Our horticulture staff is still planting—getting new plants in the ground while conditions are still good for establishment and future growth. BUT they are also grappling with a luxuriant growth of the weeds that have loved this wet winter just as much as have the native plants. Of course, volunteers grapple right along with staff (witness the great peplus pull that took place just a week ago). Special thanks to those of you who were part of “Team peplus pull”—it is not the world’s most pleasant work but it sure is rewarding to “disappear” those patches of chartreuse green.

Speaking of our wet winter, I hope that many of you have been or will be able to get out to see the bloom that is gracing our natural areas (note the RSABG fieldtrip during wildflower week—April 20—and consider signing up!). My husband and I were just over in the desert, and it is indeed spectacular. I am struck by the differences between two years ago (when winter rains also yielded a spectacular spring) and this year. Although some species are a constant, others have especially good years. This year, in the southern portion of Joshua Tree National Park, it is the year of the lupines—Lupinus arizonicus to be precise. Two years ago there were some lupines. This year the lupines are so dense and tall that they dominate: the slopes along the southern entryway to the park are purple. Also, two years ago the desert was alive with caterpillars! The most numerous were of a hawkmoth (Sphingidae) that appeared to be eating mostly the foliage of the abundant spring annual, Brown-eyed Evening Primrose (Chylismia claviformis, Onagraceae). The desert was also dead with caterpillars: it was carnage on the roads as the caterpillars attempted to cross. This year, with the Brown-eyed Evening Primrose apparently just as abundant as two years ago, I saw one (yes: ONE) caterpillar. Instead, this year, seemingly all over southern California, it is all about the Painted Lady.
butterfly migration. The air on warm days is teeming with them, all headed WNW (unless they are feeding).

Why these differences between seasons that had seemingly similar weather? The simple answer is that we do not know. Something about the intersection between the weather and hawkmoth biology made two years ago perfect for these important pollinating animals in our southern deserts. Something about the intersection between the weather and Painted Lady butterfly biology has made this year very special for these charismatic little animals. As fascinated as many scientists are by the idea of exobiology (i.e., life on other planets), many of us are annoyed that there is not more determination at all levels of society to understand life HERE on the only blue and green planet of which we are yet aware. One can only imagine how much money would be thrown into study of a newly discovered planet teeming with life! Meanwhile, here on this planet, very much teeming with life, there are insufficient resources for essentially all aspects of biological research and scientists spend huge amounts of time and effort chasing grants. As you ponder life on this wonderful planet, visit RSABG frequently this spring. Take a walk before or after your volunteer shift or come just to walk. Spring will be unfolding and there will be something new to see each time!

Nature Interpreters, your fans await you! The April tour calendar will keep everyone busy. As I write, there are 20 tours of many different types posted in April. This presents a variety of options and the need for all Nature Interpreters on the spring roster to swing into action. Please check Volgistics, the tour boards and/or the online tour calendar frequently. Fill in the blanks as soon as you can. Stay in touch with Team Captains and Monthly Organizers.

Twice-monthly work party volunteers are to be commended for steadily churning out materials for a plethora of events and programs. How many miles of fiber have you bundled? How many acorn puzzles have you folded? April sessions are set for Wednesday, April 10 and Monday, April 22, from 9 to 11 a.m. in the Lenz horticulture Classroom. Many hands make light work. All are welcome.

In Memoriam

Paul Royalty

The Garden would like to acknowledge the passing of — and warmly remember — a dear friend and RSABG Volunteer Emeritus, Paul Royalty. Paul died on January 8, 2019. Following retirement as an aerospace engineer, Paul joined the volunteer Class of 2001 and became a Nature Interpreter. He is best known at the Garden for having served as team captain of the Thursday two-hour program, chair of the Visitor Education Committee and bulk mailing chair. Paul retired from volunteering in 2014 as Associate Alumni and was honored with the distinction of Emeritus Alumni in June 2016. In his own words, “the Garden offers a community service that I like and endorse.” He will be greatly missed. A memorial service for Paul Royalty will be held in the spring.
Join us for Bird L.A. Day on Saturday morning, May 4, 2019. Nature Interpreters and additional welcoming volunteers are needed. Activities begin at 8 a.m. with a family-friendly bird walk led by Chris Verma of Wild Birds Unlimited. Discover what makes a bird a bird and how to attract birds to your yard. Stations open from 9 to 11 a.m. Not as big as Bird Festival (yet), but an enjoyable way to spend a few hours in the Garden. Free with General Admission. No event orientation, but Kathleen and I are happy to discuss plans with you. Sign up using Volgistics.

Looking forward to seeing you soon!

–Judy

**Volunteer Programs**
Kathleen Noll, Manager of Volunteer Programs

**Share the Garden’s Mission at upcoming community events:**
This spring we will be staffing outreach tables at various events at the Garden and around the community. RSABG volunteers will be talking with neighbors about Garden events and opportunities, and looking for volunteers. Our booths across the events listed below will give our community the opportunity to learn more about our wonderful Garden. Volunteers are still needed, please contact Kathleen to sign up!

**A Garden of Verses:** Poetry Day in the Garden: Saturday, April 6.

**Wildflower Week:** Saturday, April 13–Sunday, April 21.

**Claremont Earth Day:** Sunday, April 14.

**National Public Gardens Day:** Friday, May 10.

**Save the Date:**
**Butterfly Pavilion Opening Day:** Saturday, May 11.

**Volunteer Appreciation Dinner:** Wednesday, June 26 at 5:30 p.m.

**Volunteer Enrichment**
Lynn Miller for Enrichment Committee

This month we are pleased to have Dave DeGroot, cousin of RSABG’s Sarah DeGroot, talk on his experiences as a Madera Canyon docent in the Santa Rita Mountains of Arizona. When he was teaching, Dave says he spent many a week hiking and relaxing in this area where he found a “deep and abiding love for everything around the canyon.” He points out that in this region there is quite an overlap of tropical species with those of North America. He looks forward to sharing docent ideas and stories that may include exotic plants, bears, lost mines, snakes and spiders, and Apache wars. And that’s just the beginning. Dave is an experienced docent and member of the Friends of Madera Canyon and comes with the recommendation of the Tucson Public Libraries and the Arizona Master Naturalists.

**A Very Happy April Birthday to:**

Al Noreen
Peter Kavounas
Ingrid Spiteri
Michael Shelley
Betsy MacLaren
Katy Douglass
David Gish
Joe Vlietstra
Rachel Cheung
Marilyn Irwin
Bev Jack
Jordyn Brase
Janice Tsuma
Alegria Garcia
Please join us on Monday, April 22, at noon, in the East Classroom. As always, you are welcome to bring your lunch. Coffee, tea, and cookies will be provided.

**NOTES FROM VISITOR EXPERIENCE**

David Bryant, Director of Visitor Experience

**Wildflower Week: A Commencement of Color!**

A parade of California wildflowers is brewing across our state’s sublime landscapes - blossoms of all shapes, sizes and colors are preparing their entries for this grand springtime display. A winter profuse with rain and the right concoction of temperatures has set these floral festivities in motion. From “Poppypalooza” along Highway 15, reports of Anza Borrego in full glory, the southern entrance of Joshua Tree rife with desert lupines, to our very own Garden beginning to transform into gorgeous hues, spring is upon us.

This year, we are celebrating the sensational blooms and wildflower-mania with Wildflower Week! Over the course of nine days, from April 13–21, we will host our very own parade of displays, exhibits and events in celebration of California’s remarkable annual and perennial bloomers.

From April 13–15, we will commence Wildflower Week with the Wildflower Show, the Garden’s longest running tradition that has highlighted the beauty and diversity of native wildflowers for more than 70 years. Garden botanists will collect flowers from four locations throughout Southern California and exhibit these wide-ranging species for the public. Following the Wildflower Show, from April 16–21, the Garden’s Native Designers will exhibit floral arrangements that speak to each volunteer’s stylistic voice. Hanging

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**HELP WANTED!**

Kathleen Noll, Manager of Volunteer Programs

**Tram Driver:**

**Volunteer Shuttle Operator for Garden & Private Events**

**Description of work:** There are many, many activities at the Garden requiring transportation from the lower parking lot near the kiosk to various destinations in the Garden. Volunteer tram operators provide transportation not only for private events on weekends, but also for special Garden events and volunteer luncheons. Training will be provided. You must have a current state-issued driver’s license on file with the Garden.

**Shift Times:** Second Friday of the month in June from 11 a.m.–1:30 p.m. Private and special events Saturdays and Sundays between 3–7 p.m.

**Work Area:** Kiosk to Administration Building, California Courtyard, Cultivar Garden, Container Garden and mesa loop.

**Time Commitment:** At least one year

**California Gift Shop:**

**Volunteer Gift Shop Assistant**

**Description of work:** Two volunteers who can assist with customer service and cashier duties in the Gift Shop. This involves greeting customer, assisting with purchases, and offering information about the Garden. Training will be provided. The gift shop manager will perform supervision.

**Shift Times:** Mondays, 1–5 p.m., select Saturdays and Sundays, 1–5 p.m.

**Work Area:** Gift Shop

**Time Commitment:** Ongoing
in companionship with Wildflower Show and the Native Designs Show, The Art of the Wildflower is a group exhibition featuring artists that depict or are inspired by California wildflowers. A portion of sales from these beautiful works will support the Garden. Throughout Wildflower Week, visitors can venture along a Wildflower Trail—a veritable rainbow crisscrossing through Garden areas and venues that have been planted with annuals. Don’t miss all of these fabulous displays!

Wildflower Week will also feature several fun events. Join us on April 13 from 5–7 p.m. for Wildflower Happy Hour and enjoy the premiere of this exciting week with access to the Wildflower Show and The Art of the Wildflower exhibit. Admission is free and open to the public but limited to the first 200 attendees. Inspired cocktails, craft beer and wine will be available for purchase. On April 20, Garden staff will lead a field trip to the Sand to Snow National Monument to explore the colorful blooms of this diverse region. Throughout the week, tram tours will be offered to the public at 1 p.m. each day for an additional $5 fee.

I hope you will join in the festivities for this vibrant and special week that highlights California’s beautiful wildflowers. Looking forward to a magical spring together!

Books of the Month
Barbara Nakaoka,
Volunteer Library Committee


My, Oh My — A Butterfly from The Cat in the Hat’s Learning Library offers a great beginning explanation of the life cycle of the butterfly with an excellent section on the monarchs. The pictures as well as the narrative describe what happens to caterpillars and butterflies as development progresses. It provides information on how the butterfly defends itself, what it sees and how it eats. Children are also provided a way to start a butterfly hobby. The monarch section is an excellent segue to the next book. Recommended for ages 4–8. This book can be checked out from the Volunteer Library Children’s Section.


This is a technical study of the evolutionary interaction between the monarch butterfly and the milkweed plant. The text is replete with 80 color photos and images, scientific findings, ongoing studies, and the author’s own research. The story begins with the monarchs and the milkweed storing up for an “arms race.” The technical term for this give-and-take and back-and-forth battle between the milkweed and monarch is “coevolution.” This has led to the plant producing “heart stopping toxins” and butterflies that have derived solutions to this challenge. The book continues with the specifics and the results of the battle.

Finally, the author addresses the decline in numbers of the monarchs. He rejects the idea of the lack of milkweed. He states the decline is due to a combination of factors.

This is a scholarly treatment of the Monarch and can be found in the Volunteer Library for your edification and enjoyment.
Bristlecone Pine  
*(Pinus longaeva)*

Rudi Volti, Nature Interpreter

I don’t know the average age of RSABG volunteers, but it seems reasonable to assume that it exceeds the national median of 38.0 years. It is even possible that a few of us already have gone beyond the mean American life expectancy of 79 years (which puts the U.S. in a pathetic 31st place among the nations of the world, just above Cuba). More generally, humans do quite well among the *Mammalia* class. Bowhead whales can live for more than 200 years, but they are outliers; elephants, the longest-lived land mammals after *Homo sapiens*, average 56 years. A few animals other than mammals significantly outdo human lifespans; some parrots live a hundred years or more, while the longevity of giant tortoises is legendary; one was recorded as having reached the age of 177. At sea, the Greenland shark lives 400 years or more, but that’s a blip compared to the 10,000-year lifespan of the Antarctic sponge.

Things get tricky when we try to assess the lifespans of members of the plant kingdom that form clonal colonies. These may have interconnected root systems, may reproduce through cloning, or have both characteristics. The best-known example of the last group is the aspen (six species of the genus *Populus*). Each individual tree has been derived from a single seedling and is therefore genetically identical to all the others. Taking into account its common origin, the oldest known cluster has been around for more than 80,000 years.

If plant colonies such as these are excluded, the title of longest-living tree goes to the Great Basin bristlecone pine (*Pinus longaeva*). This genus encompasses two species in addition to *P. longaeva*: the Rocky Mountain bristlecone pine (*Pinus aristata*) and the foxtail pine (*Pinus balfouriana*). Great Basin bristlecone pines range from Utah through Nevada, and barely edge into the White Mountains of eastern California. They grow in isolated groves at altitudes ranging from 1,700 to 3,400 m. (5,600–11,200 ft.). Bristlecone needles, which are about 2.5–4 cm (1 to 1.6 in.) long and grow in bunches of five, continue to photosynthesize and to supply nutrients throughout the life of a tree.

When measured by ring count, one bristlecone was reckoned to be 5,068 years when it was inadvertently cut down. Today, the oldest living tree, nicknamed Methuselah, is thought to have attained the age of 4,765 years. Their longevity is in part due to their composition. Their slow growth results in dense wood that, as with most pines, contains a lot of resin. These characteristics render it resistant to attacks by insects, fungi, and other potential pests. The trees have what is known as “sectored architecture.” Large roots support individual sections of the tree, feeding only those parts of the tree directly above them. Accordingly, the death of one root due to soil erosion leads to the death of only the sector of tree above that root. Many bristlecone pines, especially those at high elevations, may have only one or two living sectors, which are indicated by a strip of bark. Exposed wood on both living and dead trees erodes like stone when exposed to the elements, resulting in the typically gnarled shape of the trees.

Due to their longevity, bristlecone pines serve as records of climatic shifts by storing thousands of years of weather data within their ring systems. This example of dendrochronology is valuable for the study of past climate change, but coming to a better understanding of times gone by doesn’t necessarily allow accurate predictions about the future. Long-lived though they may be, bristlecones are not invulnerable; like all living things, they are threatened by climate change, the precise consequences of which are both unknowable and potentially disastrous.
Spider Silk
Fred Brooks, Nature Interpreter

Is spider silk as strong as steel? Steel has a slightly greater tensile strength (resists breaking when stretched), but silk is more elastic (resumes normal shape following stretching). Additionally, spider silk is less dense than steel, so an equivalent weight is about five times stronger. Silkworms, honeybees, caterpillars, mussels, and some other animals produce silk, but with different properties.

Spider silk is made from specialized proteins and water in unique glands in the spider’s abdomen. The gel-like crystalline liquid is squeezed from a gland into an ever-narrowing duct. The proteins are aligned parallel with the duct walls and water removed, forming a single strand with a distinct characteristic. When silk is needed, the spider’s legs pull it from the rear of its abdomen through a complex spigot-like “spinneret.” If the spider suddenly drops, its weight releases the silk automatically.

Some spiders make up to seven types of silk for various uses, each from a different gland. Strong dragline silk forms the basic structure of a web and also is used as a lifeline. Sticky capture silk woven into the web traps and holds prey. Stiff egg cocoon silk protects egg masses. Swathing silk is especially strong and used to wrap freshly trapped prey. Spiders also use their silks to line nests, mark trails, as alarm lines to alert them of prey, or as a sail to travel with the wind (ballooning or kiting). Some spiders leave a trail of pheromone-impregnated silk to lure potential mates.

Spider silk genes were first cloned in 1990 and have been inserted in bacteria, yeasts and some plants. The output, however, is too small for industrial use. Currently, genetically engineered goats produce silk proteins in their milk. The proteins are purified and then forced through small pores to form strands. Potential uses for manufactured silk include: sutures for eye and nerve surgery; non-immunogenic coatings for medical implants; clothing; body armor lighter, more flexible, and tougher than Kevlar; and even arrester cables to slow jets landing on aircraft carriers. What will you want when products made from spider silk are available?

April Calendar

Volunteer Opportunities & Special Events

April 6: A Garden of Verses: Poetry Day in the Garden, Saturday, 10 a.m.–3 p.m.

April 13–21: Wildflower Week, Saturday–Sunday 10 a.m.–4 p.m., FREE with Garden admission.

April 13: Wildflower Happy Hour—Celebrate the commencement of Wildflower Week with a fun happy hour, Saturday, 5–7 p.m.

April 14: Claremont Earth Day, Sunday, 8 a.m. to 1 p.m., Second Street, Claremont Village.

Ongoing meetings, Classes & Workshops

April 1: Volunteer Library Committee Meeting, Monday, 10–11:15 a.m., Volunteer Library.

April 3: Volunteer Public Relations Committee Meeting, Wednesday, 10–11 a.m., Volunteer Library.

April 4: Volunteer Organization Board Meeting, Thursday, Noon–1:30 p.m., East Classroom.

April 6: A Garden of Verses: Poetry Day in the Garden, Saturday, 10 a.m.–3 p.m.
April 6: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

April 7: Free Family Bird Walk: Pomona Valley Audubon Society, Sunday, Admission Kiosk; 8–9 a.m., FREE with Garden Admission.

April 7: Tea Ceremony — Celebrate a traditional Japanese Tea Ceremony with Keiko Nakada Sokei of the Urasenke School in chado in Kyoto. Pre-registration is required. $25 members.

April 10: Wednesday Workday Special PEPLUS PULL! All are welcome! Wednesday, 8–11 a.m. Meet at the Horticulture Break Room; refreshments provided!

April 10: Education Materials Work Party, Wednesday, 9–11 a.m., Lenz Horticulture Classroom, everyone welcome!

April 12: Wildflower Show Set-up, Friday, 8–11 a.m., East Classroom.

April 13: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

April 13: Wildflower Tram Tour, Saturday, 1 p.m., Sign up at Admission Kiosk $5.00 + General Admission.

April 14: California Wildflower Show, Sunday, 10 a.m–4 p.m., FREE with Garden admission.

April 14: Wildflower Tram Tour, Sunday, 1 p.m., Sign up at Admission Kiosk $5.00 + General Admission.

April 14: Claremont Earth Day, Sunday, 8 a.m. to 1 p.m., Second Street, Claremont Village.

April 16: Wildflower Tram Tour, Tuesday, 1 p.m., Sign up at Admission Kiosk $5.00 + General Admission.

April 17: Volunteer Personnel Committee Meeting, Wednesday, 9:30–11 a.m., Volunteer Library.

April 17: Wildflower Tram Tour, Wednesday, 1 p.m., Sign up at Admission Kiosk $5.00 + General Admission.

April 18: Visitor Education Committee Meeting, Thursday, Noon–1:15 p.m., Volunteer Library.

April 18: Wildflower Tram Tour, Thursday, 1 p.m., Sign up at Admission Kiosk $5.00 + General Admission.

April 19: Wildflower Tram Tour, Friday, 1 p.m., Sign-up at Admission Kiosk $5.00 + General Admission.

April 19: Spring Botany Seminar Series, Friday, 3 p.m–5 p.m., East Classroom.

April 20: Family Bird Walk — Wild Birds Unlimited, Saturday, 8 a.m., Admission Kiosk, FREE with Garden Admission!

April 20: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

April 20: Wildflower Field Trip: Sand to Snow National Monument, Saturday, 8 a.m.–6 p.m., pre-registration is required $60 members. See RSABG.org Wildflower page for more information.

April 20: Wildflower Tram Tour, Saturday, 1 p.m., Sign up at Admission Kiosk $5.00 + General Admission.

April 21: Wildflower Tram Tour, Sunday, 1 p.m., Sign-up at Admission Kiosk $5.00 + General Admission.

April 22: Education Materials Work Party, Monday, 9–11 a.m., Lenz Horticulture Classroom, everyone welcome!

April 22: NICE Walk (Nature Interpreter Continuing Education) Monday, 10:30–11:30 a.m., Admission Kiosk. All volunteers welcome!

April 22: Volunteer Enrichment — Dave DeGroot will give a talk on The Secrets of Madera Canyon, Monday, Noon–1 p.m., East Classroom.
April 26: Spring Botany Seminar Series, Friday, 3–5 p.m., East Classroom.

April 27 & 28: Grass Identification Workshop and Field Trip with Travis Columbus, Ph.D. In this workshop participants will be instructed in detail on the vegetative and reproductive features of grasses (Poaceae). Saturday and Sunday, 8:30 a.m–5 p.m. Pre-registration is required, $250 members.

April 27: Garden Walking Club, Saturday, 8 a.m., Admission Kiosk.

April 27: Medicinal Plants of California Herb Walk, Saturday, 10 a.m–1 p.m., pre-registration required $20 members.

April 30: Volunteer service hours due. Tuesday, 8 a.m.–5 p.m.