



Colorado
Cactus &
Succulent
Society

2023 GUEST EDITOR:
SCOTT BURKHOLDER

MONTHLY PLANT SHOW

Seriously, We will have
another one. Eventually.

[Club News!](#)

[June Online
Zoom Meeting](#)

[CSSA Meeting](#)

[The Cactus Cut-Up
will be held in July](#)

June 2023, Vol 27 No. 1

The Colorado Cactus & Succulent Society promotes education, enjoyment, cultivation, and conservation of cacti and other succulents among our members and the larger community.



A street scene from the Show and Sale!
Scott Burkholder Photo

UPCOMING MEETING

Date: Tuesday, June 20, 2023

Time: 7:00 PM

Location: Zoom!

Presentation: CSSA Biennial Convention

Details:

We will discuss the Cactus and Succulent Society of America Convention in Colorado Springs. This is an opportunity to get details and ask questions.

SUCCULENT BITS

June Online Meeting -

We've invited CSSA folks to answer questions about the Convention itself, as well as opportunities to volunteer more information, and the first organization meeting!

June 20th @ 7pm.

CSSA Biennial Meeting -

The Biennial Meeting is next month!! The Sign-Up Genius web page is active and we are staffing committees.

[Sign up here.](#) Please attend June's meeting for more details and to answer questions.



A Blue Ribbon Lithops!
Scott Burkholder Plant & Photo

SEE YOUR NAME AND PICTURES IN PRINT!

Submissions for the next newsletter are due at the end of the month.

We need your articles and pictures! Do you have an interesting plant? How about an interesting plant story? That you would like to see in print? Send it to me at seisnoir@comcast.net.

Please send photos as either JPG or PNG files. As for stories and news, send those as DOC or RTF, or TXT files, please!

Grant Requests for July's CSSA Biennial Convention!

We have budgeted for some \$300 grants to support CCSS members attending the Cactus & Succulent Society of America convention in Colorado Springs. If you are interested please contact a board member!

Cloud-Hughes Grant Request

Michelle Cloud-Hughes' grant request is included, in this newsletter. The Board recommends approving it as she is researching a plant important to the club. The member ship will vote on her request at the next meeting.

NOTES FROM THE RE-POTTING BENCH

It's been a crazy month since the Show and Sale...but honestly, it's been a crazy year so far! But not crazy enough to forget thanking all those who volunteered for the 2023 CCSS Show and Sale! THANK YOU EVERYONE! AND please look for the article by Harriet Olds. What a fun time for all. Volunteering at the show and sale is so much fun and winning trophies is just part of it. Don't be left out – next year is just around the corner...

...actually, you can get involved sooner than that! Here's how – The 2023 Cactus and Succulent Society of America's Biennial Convention is fast approaching. This is a National Convention and it's an honor to be able to host it in Colorado. It is another fun event and you get to meet cactus people from all over the United States. There are a lot of volunteer positions available from helping with the plant sale to selling CCSS hats and shirts!

This is such a big and important event that I am postponing the Cactus Cut-Up until July so we can concentrate on the CSSA Convention. Devra and Michael Roll are organizing volunteers right now! Our June meeting will give us a chance to share information and for everyone to ask questions. Get your answers at the June meeting! Please try to attend the CSSA Convention this summer – visit Sign-Up Genius to find a spot to help! And THANK YOU EVERYONE!

I am also re-publishing Michelle Cloud-Hughes' grant request. She had the unfortunate luck to submit her request right before I left the country and we need to return to regular business

Thanks again! I hope to chat with everyone at the meeting!

Scott Burkholder
2023 President
seisnoir@comcast.net



Scott >>

2023 CACTUS AND SUCCULENT SOCIETY OF AMERICA BIENNIAL CONVENTION IN COLORADO SPRINGS

VOLUNTEER OPPORTUNITIES FOR THE CSSA CONVENTION

The Signup Genius webpage for volunteering for the CSSA Convention is live! [Sign up here.](#) Please skim through the entire form before choosing your shifts as there are several pages. We don't want you to miss your dream job!

CARROTS:

- For each 4 hour shift you complete, you will receive a day of access to conference speaker presentations on any day you choose. See the description for the "chaser car" positions for the only exception to this rule.
- The opportunity to meet attendees and speakers from around the US and across the globe.
- A sense of purpose and the chance to rub elbows with our fantastic crew of CCSS volunteers!



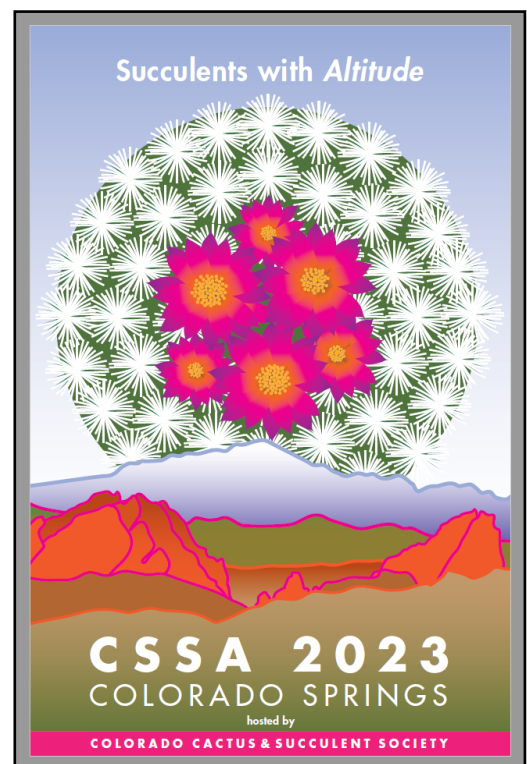
Rod Haenni Accepting the Gavel in 2019!
Scott Burkholder Photo

NOTE:

Unlike at our own sales, there won't be food or coffee available for volunteers, as the hotel does not allow for that kind of set-up. However, there is a restaurant in the hotel, and lunch spots nearby. There will be plenty of places to refill water bottles.



CCSS Members in San Luis Obispo, CA!
Scott Burkholder Photo



2023 PLANT SHOW ROUNDUP

The 2023 CCSS Show and Sale was a wonderful success! It was gratifying to see so many volunteers pull together and make the Show and Sale memorable.

We thank our Show judges, Woody Minnich, Artie Chavez, HV Rodman and Jackson Burkholder for the difficult task of awarding the trophies and ribbons among the 223 exhibited cacti and succulents. The People's Choice Award was most unique this year. When the votes were tallied, there was a tie between a plant in the Open Division and one in the Novice Division. In all my years of working the Show, this had never happened before. When the tie was broken by volunteers who had not yet voted, Lorraine Yeats won the Award for her flowering Adenium arabicum.

But I get ahead of myself. Ed and Karen Morrell worked hard to get tables set up for the Show on Friday. Many volunteers helped to get the Show ready for judging early Saturday morning. Others volunteered to be clerks including Jim Rogers, Ed and Karen Morrell, Ryan Vinchetti, Sandi Bagley and Harriet Olds.



On Saturday and Sunday, monitors made sure Show plants were safe from curious fingers and trays of Sale plants. They answered questions and made everyone feel at home. Special thanks go to Neal Lindquist, Sandi Bagley, Niki Charles, Vern Burke, Don Le, Kenney Prior, Karen Berry, Hannah Craft and the many volunteers who just showed up to help.

A big thank you to all the exhibitors whose beautiful plants and some extraordinary pots captured the awe of everyone who visited the Show.

Congratulations to all our winners!

Submitted by Harriet Olds

2023 PLANT SHOW RIBBONS AND TROPHIES

At the Show and Sale CCSS recognizes the winning exhibitors and their plants with trophies and special ribbons. Our trophies are named for past members whose hobby became a legend in our club.

The trophy winners for 2023 are as follows:

Best of Show, Dwight Davidson for *Ubelmannia pectinifera*

Lynn Wilson Trophy, Best Succulent (non cactus), Alex Macmillan for *Crassula arborescens*

Heacock Trophy, Best Haworthia, Russel Lo Presti for *Haworthia hybrid*

Dana Such Trophy, Best Mammillaria, Jack Clark for *Mammillaria gigondas*

Jerry Sochor Trophy, Best Colorado Native, Sharon Bolton for *Echinocereus triglochidiatus*

Jim Sykes Trophy, Best Cactus Novice, Aubree Murray for *Schlumbergia enigma*

In addition, rosette ribbons are awarded in Open and Novice Divisions for exceptional plants.

Best Succulent Novice, Aubree Murray for *Dracaena v pinguicula*

Best Cactus Open, Jackson Burkholder for *Echinocereus lindsayi*

Best Succulent Open, Tate Griebel for *Commiphora angolensis*

Best Caudiciform, Harriet Olds for *Pachypodium brevicaulis leucoanthum graft*

Judges award special ribbons of their choice in each Division.

Judge's Choice, awarded by HV Rodman, Russell Lo Presti for *Haworthia hybrid*

Judge's Choice, awarded by Jackson Burkholder, Aubree Murray for *Opuntia fragilis*

Judge's Choice, awarded by Woody Minnich, Jack Clark for *Obergonia denegrii*

Judge's Choice awarded by Artie Chavez, Tate Griebel for *Bursera fagaroides*

Sweepstakes Awards are given to the exhibitor who has accumulated the most points (blue 3, red 2, white 1) in each Division.

Sweepstakes Open, Tate Griebel

Sweepstakes Novice, Aubree Murray

People's Choice Award goes to the plant receiving the most votes by Show visitors.

People's Choice, Lorraine Yeats for *Adenium arabicum*



2023 PLANT SHOW TROPHIES



Best of Show
Dwight Davidson for *Ubelmannia pectinifera*



Lynn Wilson Trophy
(Best Succulent (non cactus))
Alex Macmillan for *Crassula arborescens*



Heacock Trophy (Best Haworthia)
Russel Lo Presti for *Haworthia* hybrid



Dana Such Trophy (Best Mammillaria)
Jack Clark for *Mammillaria giondas*



Jerry Sochor Trophy (Best Colorado Native)
Sharon Bolton for *Echinocereus triglochidiatus*



Jim Sykes Trophy (Best Cactus Novice)
Aubree Murray for *Schlumbergia enigma*

MICHELLE CLOUD-HUGHES GRANT REQUEST

Michelle Cloud-Hughes
Desert Solitaire Botany and Ecological Restoration
3622 Jackdaw Street
San Diego, CA 92103

Dear CCSS:

I am requesting funds to assist in a BLM Cooperative Agreement with botanists at the California Botanic Garden, Arizona State University, and the Navajo Nation to determine if *Cylindropuntia ×viridiflora*, the Santa Fe cholla, constitutes a valid taxon for protection under the Endangered Species Act. The goal of this project is to use genetic and morphometric analyses to determine whether *C. ×viridiflora* populations represent a single or multiple genetic lineages and what role hybridization has played in its origins. This study includes ex situ populations, to determine whether these are conserving a sufficient degree of genetic diversity and which *C. ×viridiflora* populations should be prioritized for further protection. This study will allow us to delineate *C. ×viridiflora* populations and prioritize conservation efforts based on detailed, population-level genetic and morphometric data. This study is expected to improve our understanding of cactus diversity and to provide a scientific basis for the allocation of management efforts and conservation funding.

The requested grant money will be used for travel expenses to *Cylindropuntia ×viridiflora* populations to collect morphometric measurements and specimens for genetic analysis in the first year of this project. It is anticipated that my participation after the first year will be funded by the Cooperative Agreement. The excellent and experienced scientists involved in this study make the success of this project highly likely. I have been fascinated by *C. ×viridiflora* as long as I have been studying *Cylindropuntia*, and I am extremely enthusiastic about taking part in this study. I appreciate your time and thank you for your consideration of this grant proposal.

Sincerely,

Michelle Cloud-Hughes
Desert Solitaire Botany and Ecological Restoration

The Colorado Cactus and Succulent Society Board of Directors recommends approving this Grant.

MCH – GRANT REQUEST

Project Description:

This project is a federally-funded BLM Cooperative Agreement with botanists at the California Botanic Garden, Arizona State University, and the Navajo Nation to determine whether *Cylindropuntia ×viridiflora*, the Santa Fe cholla, meets the genetic and morphological criteria to be considered a valid taxon for potential protection under the Endangered Species Act. This enigmatic cholla is of increasing conservation concern due to habitat loss, but conservation efforts have been hindered by ambiguities over what actually constitutes *C. ×viridiflora* and what role hybridization has played in its origins.

From the project proposal (Porter 2022):

“Here we propose using landscape genomic tools to provide the genetic and phylogenetic insight necessary to determine whether sets of populations have (1) significant divergence and genetic structure, indicating that they represent evolutionarily meaningful groups, i.e., varieties, subspecies or species; (2) if they comprise a continuous genetic cline without discrete structure, representing a single species cline; (3) if they are truly panmictic representing a single uniform species; or (4) whether each population or region are genetically unique but morphologically convergent elements, representing either a series of cryptic but independent taxa or hybrids.”

This study will use population-level genomics and morphometrics to determine which, if any, populations of what has been called *C. ×viridiflora* are genetically distinct enough to warrant taxonomic recognition, either at the species or subspecies level. Genetic and morphometric data will be collected from up to 480 individuals of *C. ×viridiflora* from up to 16 populations. These paired genetic and morphometric data will also be collected for up to 288 individuals of *C. imbricata*, *C. whipplei*, and *C. davisii*, in order to determine what genetic contribution, if any, these species have made to *C. ×viridiflora*.

This range-wide data assemblage will allow us to determine whether any of these populations or groups of populations are genetically worthy of taxonomic recognition and where future conservation efforts should be focused. Ex situ conservation populations will also be included in this study, in order to determine whether a sufficient amount of genetic diversity is being conserved and which areas need additional ex situ protection. Populations of *C. ×viridiflora* are often associated with indigenous archeological sites, and this study will help clarify the cultural and ethnobotanical significance of this taxon. Overall, this study is expected to improve our understanding of cactus diversity and the role of hybridization in cactus evolution, while providing a scientific basis for the allocation of management efforts and conservation funding and acting as a model for future genomic studies of cryptic species complexes.

Project Goals and Beneficiaries:

The predominant goal of this study is to clarify the taxonomic issues surrounding *Cylindropuntia ×viridiflora* in order to better manage conservation efforts. This will be achieved by 1) characterizing the genetic variation within and among populations *Cylindropuntia ×viridiflora*; 2) determining whether any of these populations or groups of populations are genetically and morphologically distinct enough to warrant taxonomic recognition, and if so, at what level; and 3) determining whether current ex situ populations represent adequate genetic variation and, if not, which natural populations should be targeted for conservation.

MCH – GRANT REQUEST (CON'T)

The benefits and beneficiaries of this project are many. From the project proposal (Porter 2022):

“This research will provide benefit to the BLM, USFWS, Navajo Nation, Pojoaque Pueblo, Acoma Pueblo, scientific community, and general public. By clearly defining genetically meaningful taxonomic units, government agencies, tribes, NGOs and the scientific community can appropriately manage these biological resources, provide sound conservation effort and develop an understanding of the ecology of "real" (i.e., genetically defined) taxa. The general public have an opportunity to learn and appreciate a more well-understood biotic diversity. In addition, they can have confidence that government agencies are managing resources and applying conservation effort to genetically meaningful groups of organisms, which require management and resources.”

Likelihood of Project Success:

This project has a very high likelihood of success. The Principal Investigator, Co-PIs, and contracted researchers are all well-established, highly experienced scientists who have successfully completed and published numerous similar projects. The contract includes an annual performance and quality assessment of all team members by the PI, in consultation with the BLM, for overall productivity, quality of performance, adherence to schedule, alignment to project goals, and BLM satisfaction. These evaluations will help ensure the success of this long-term project.

Project Timeline and Deliverables:

Collection of the *Cylindropuntia ×viridiflora* morphometric data and specimens for genetic analysis – the portion of this study for which I am requesting grant funds -- will be conducted from January to August 2023. If awarded this grant in any amount, I will provide a report to the CCSS at the end of 2023 in any format(s) requested, e.g., newsletter article, presentation, etc. I will also contribute an article to the Cactus and Succulent Journal at the conclusion of the entire project. The study as a whole is expected to be completed by the end of 2024, with the results to be presented at the national botany meetings of 2024 or 2025 and published by Porter et al. in a peer-reviewed journal within three years of project completion.

Monetary and non-monetary benefits to CCSS:

This range-wide study of *Cylindropuntia ×viridiflora* will help determine whether populations in southwestern Colorado represent *C. ×viridiflora*, a cryptic taxon or taxa, an unstable hybrid swarm, or some combination of these. If the presence of *C. ×viridiflora* and/or new *Cylindropuntia* taxa are verified in Colorado, the CCSS will be instrumental in helping to spread the information and pique the interest of cactus enthusiasts, horticulturalists, native plant enthusiasts, and conservationists statewide, which could potentially lead to increased club membership, plant sales, garden visits, etc. This is in addition to the multiple benefits to the general public detailed in the Project Goals and Beneficiaries section above.

Other Collaborators and Beneficiaries:

This project is funded through a Bureau of Land Management Cooperative Agreement. The main collaborators and their contact information are listed in the Responsible Parties section above. The project beneficiaries and their projected benefits are detailed in the Project Goals and Beneficiaries section above.

2023 COLORADO CACTUS AND SUCCULENT SOCIETY BOARD OF DIRECTORS

SCOTT BURKHOLDER

President
seisnoir@comcast.net

RANDY TATROE & PANAYOTI KELAIDIS

Vice-Presidents, Programs
rtatroe@q.com
KelaidiP@botanicgardens.org

ADRIAN SAUNDERS

Treasurer
adrian.saunders@comcast.net

ALEX MACMILLAN

Member at Large
'alex.r.macmillan@gmail.com

STEVE HARLEY

Membership
ccss@paper-ape.com

DAVID LANDES

Show and Sale (Co-Chair)
negusdawit@hotmail.com

COURTNEY COWGILL

Secretary
courtney@cowgill.us

MICHAEL ROLL

Conservation and Hiking;
MichaelJRoll@gmail.com

UPCOMING PROGRAMS & EVENTS:

June X - CCSS Cactus Cut-Up

July 12-16 - CSSA Biennia Meeting in Colorado Springs

August 15th - Back to Monthly Meetings

JOIN THE CONVERSATION:



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