

January Follows...

Tucson Cactus and Succulent Society

Thursday January 3, 2019 from 7 - 9 pm

"The Other Big Bend, Travels in Big Bend Ranch State Park"

Presented by Rob Romero



Big Bend National Park is an incredible showcase of the Chihuahuan Desert. If one heads to the west, you run into Big Bend Ranch State Park, an equally incredible park that offers a more "rough it" style of park. Almost no one visits this park in comparison to the national park but it is home to some unique geography and an endemic cactus, *Echinocereus viridiflorus* var. *canus*.

Rob has been a desert rat and cactus enthusiast for over 25 years and with his first visit to Big Bend Ranch State Park in 2010 he was hooked and has visited the park 6 times (so far!). The geography and more importantly the cacti of the park will be presented to show just what a special place this really is.

Welcome to a New Year! Please come and enjoy a special program presented by Rob and really enjoy an excellent evening with friends, fun, books, raffle plants, free plants and lots of really great refreshments.



February Follows...

Tucson Cactus and Succulent Society

Thursday February 7, 2019 from 7 - 9 pm

"North Dakota Peace Gardens"

Presented by Don Vitko



North America

Don Vitko was born and raised in North Dakota. He started growing cacti with a single seed packet in the early 1960's at his grandparents farm. His grandma was a grower of many plants and huge gardens and she actually got Don interested in growing plants. He picked cacti because they were the only plant that made it without daily care while he was in school. Mainly because the farm was 70 miles away from his home town Minot, North Dakota.

In 1968 Don got his first 8'X12' wood frame greenhouse. From there his collection started growing and expanding into many greenhouses until 2010 when the International Peace Gardens in North Dakota asked him about plants for their conservatory that was currently under construction. Don then decided to donate his entire collection of 6800 plants with over 5000 species. The move started with the big plants in 2010 then in 2011 Minot had a huge flood pushing the move into just a few days.

Don and his wife Kim retired in 2015-16. Kim was a nurse and Don was a salesman for beer for 20 years, then commercial tires for 25 years. He and his wife now live in the Oro Valley area. He is now a volunteer at Bach's Cactus Nursery and continues to propagate plants. Some of his favorites are *Astrophytum*, *Copiapoa* and *Ferocactus* plus many others.

The book, "Hens and Chicks The Vitko Collection" is being offered for sale at the special price of \$16.95 (Regular Retail \$19.95). If anyone would like to order the book online, it can be purchased (free shipping in the U.S.) at Memories Forever: mfphoto.homestead.com/TCSS.html

Please be sure to come and enjoy this special program with Don Vitko and have an excellent evening with friends, fun, books, raffle plants, free plants and lots of great refreshments.



The International Peace Garden



Dan Bach and Don Vitko



Don Vitko 1970

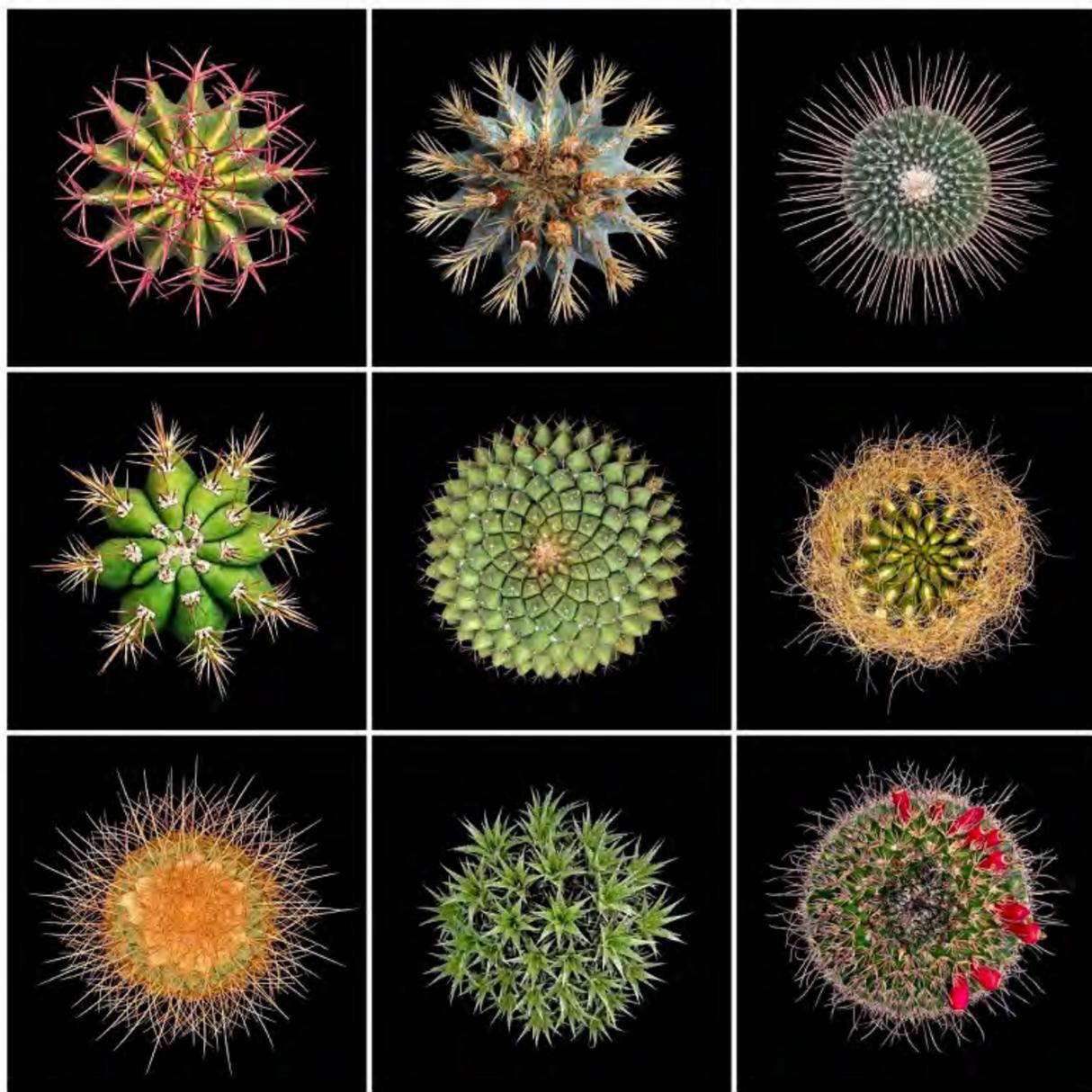
March Follows...

Tucson Cactus and Succulent Society

Thursday March 7, 2019 from 7 - 9 pm

"Arriving at Symmetry"

Presented by Steven Derks



Throughout the 1980s, I worked as a Native Plant Specialist (cactus cop) for the Arizona Department Of Agriculture. I enforced the Endangered Species Act for threatened, rare and endangered plants in Arizona. This resulted in my appreciation for the aesthetic diversity of cactus and succulents. In 2001 I photographed a saguaro cactus at night from an overhead perspective. After numerous failed attempts, I was able to align the spines of the plant in such a way that it's symmetry was revealed. The resulting pattern resembles a snowflake. Recently I began thinking about other structural similarities found in nature. For example, the comparative pattern of a spiral galaxy and a spiral tubercle and spine pattern of a cactus. This interest inspired me to return to photographing cactus with an intent of isolating the plant in black background for the purpose of highlighting it's bio-symmetry. I want to make a photo that illustrates a close-up intimacy with the plant. The paradox in this is that the cactus, by its own spiny nature, defies intimacy. As I processed the images in Photoshop, I discovered that the shadows cast from the textural patterns were of special interest. My curiosity got the best of me and I had to research why the plant produced these shapes. To my delight and surprise, I learned that the shape of then cactus or succulent for all intents and purposes is simply a complex and beautiful water container. The patterns have evolved to allow the plant to regulate its temperature. While editing photos, I continually encountered imperfections. These anomalies could dominate the image based on their ability to disrupt the patterned balance of the image. As a solution I would attempt to repair these portions of the pattern by cutting and pasting selections from other areas of the image. This proved to be a sporadically effective solution. One day in a fit of frustration while attempting to repair particularly stubborn area of a photo, I resorted to a radical solution. I cut the subject in half, then I discarded the bad half and copied and pasted the good

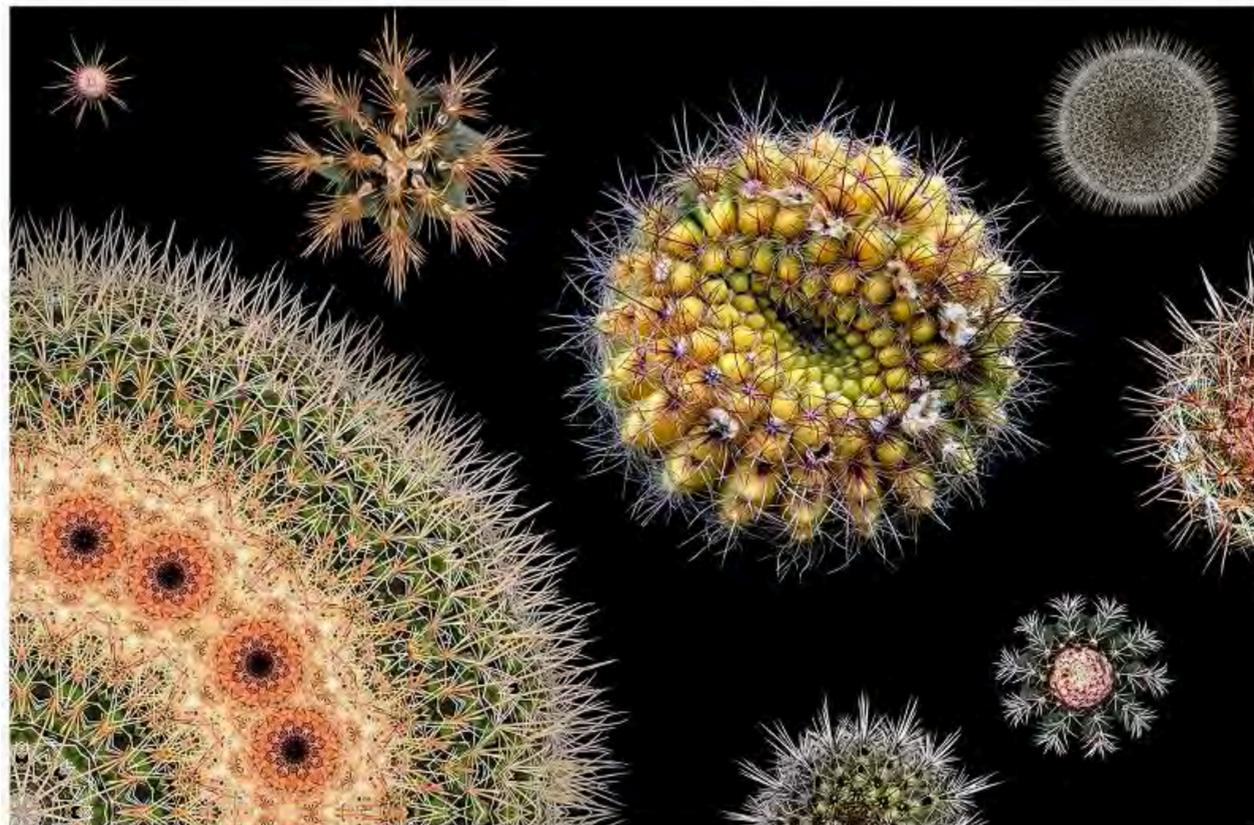
half mirroring the other side. The result was much more natural looking than I anticipated. I began to wonder about the perception of symmetry, in particular something I read that indicated humans prefer slight asymmetry in faces. To study this, I started to pay attention to the reactions of images I received from the samples I posted on social media. So far my findings indicate that people prefer the (Spherical Symmetry) reconstructed images over the natural images. Now as I make editing choices, I keep in mind these three basic forms of symmetry....

- Radial symmetry: The organism looks like a pie. ... Rotational symmetry, also known as radial symmetry in biology, is the property a shape has when it looks the same after some rotation by a partial turn. An object's degree of rotational symmetry is the number of distinct orientations in which it looks the same.
- Bilateral symmetry: There is an axis; on both sides of the axis the organism looks roughly the same.
- Spherical symmetry: If the organism is cut through its center, the resulting parts look the same.

Another major consideration when editing cactus is emphasizing patterns keeping in mind the Golden Ratio. This is a common mathematical ratio found in nature that can be used to create pleasing, natural looking compositions in design work. We call it the Golden Ratio. Biologists, artists, musicians, historians, architects, psychologists, and even mystics have pondered and debated the basis of its ubiquity and appeal. In fact, it is probably fair to say that the Golden Ratio has inspired thinkers of all disciplines like no other number in the history of mathematics. Although I don't understand the math, I can appreciate the aesthetic choices I'm obliged to sacred universal patterns used in the design of everything in our reality, most often seen in sacred architecture and sacred art. With these concepts in mind I continue to experiment with the geometry of these plants. As I developed my methods of exaggerating the symmetry I realized that they were essentially " Digital hybrids" of the original natural composition. The cactus in particular, seem intrinsically suited to bridge natural selection and modern design. Cacti are so remarkable in their symmetry that it is difficult to believe they are living things. I'm endlessly fascinated by these expressions of nature.

Steven was born in Dubuque, Iowa in 1957. He is a practicing full-time self taught artist focusing primarily in metal sculpture with an emphasis on as is found object art, and a minor practice in non-objective painting and photography. His work can be found in numerous public, corporate, museum and private art collections both in the United States and abroad. Notably a six year exhibition in the oval office / white house during the Clinton administration, and an ongoing residency exhibit at the University of Arizona Bio 2 in Oracle Az. He is currently represented by eight commercial art galleries and four private and corporate art consulting companies. He maintains a prolific studio practice that is influenced by such artists a Jim Dine and Sir Anthony Caro. Steven is currently working in Tucson, Arizona. Steven G. Derks, 801 N. Main Ave., Tucson , Arizona 85705, 520.370.1610 www.stevenderks.com

Please come and enjoy a special program that will truly open your eyes to looking at cacti. You will enjoy an excellent evening with friends, fun, books, raffle plants, free plant offerings and a large selection of really great refreshments. Also, be sure to stay until the end of the meeting and get your free plant offered by the TCSS.



April Follows...

Tucson Cactus and Succulent Society

Thursday April 4, 2019 from 7 - 9 pm

"The International Sansevieria Society Comes to Tucson and the TCSS"

Presented by Robert Webb



New species: *Sansevieria encheiridifolia*



Potentially undescribed species from Kilaguni Lodge, Kenya

Dr. Robert H. Webb is a retired hydrologist who owns and manages Arid Lands Greenhouses in Tucson. Among the many species of succulent plants that he grows and loves, Sansevierias are around the top. He has described or is in the process of describing 9 new species or subspecies of Sansevieria. Alan Myklebust and Webb are the chairmen and editors of the International Sansevieria Society, a small specialty organization now based in Tucson and affiliated with the Tucson Cactus and Succulent Society. Their flagship publication, *Sansevieria*, just released issue 39. This talk, not surprisingly, is about Sansevierias, the diversity of form and size of the existing species (about 80) and discussion of the new ones being found in Africa.

This will be an excellent presentation that everyone will really enjoy. Please come and make some new friends, talk with members and guests, have some fun, check out our library books and be sure to enjoy the great refreshments. Also, be sure to stay until the end of the meeting and get your free plant offered by the TCSS.



New species, *Sansevieria rugosifolia*



Unusual species: *Sansevieria francisii*

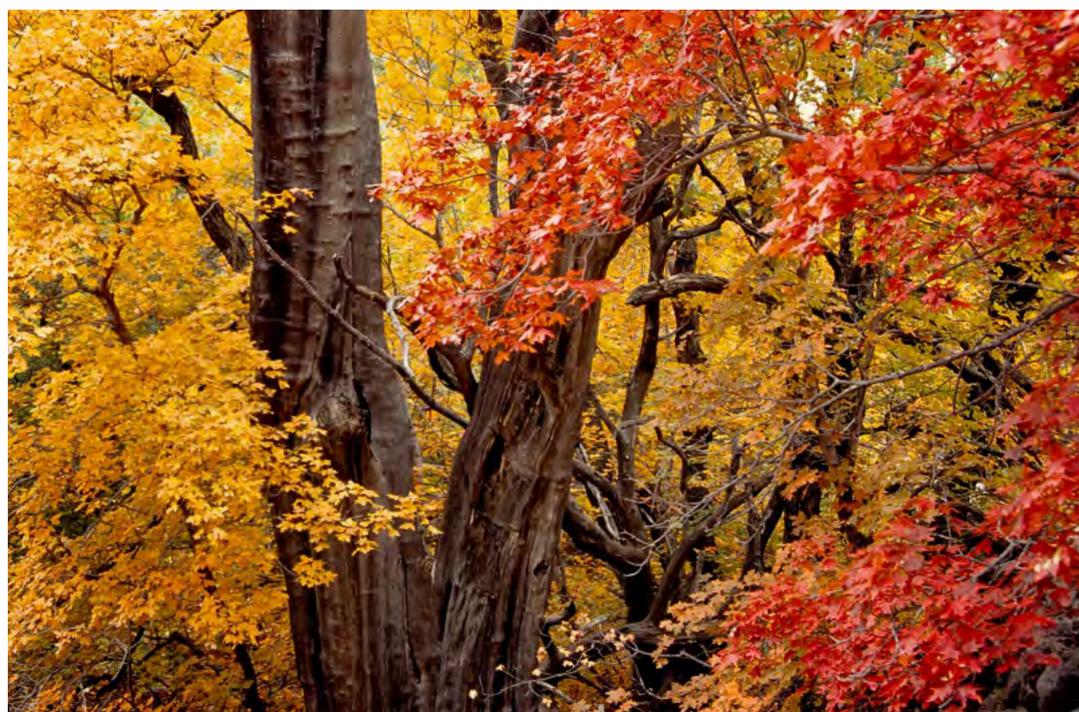
May Follows...

Tucson Cactus and Succulent Society

Thursday May 2, 2019 from 7 - 9 pm

"The Northern Chihuahuan Desert and its Texas Parks"

Presented by Gary Nored



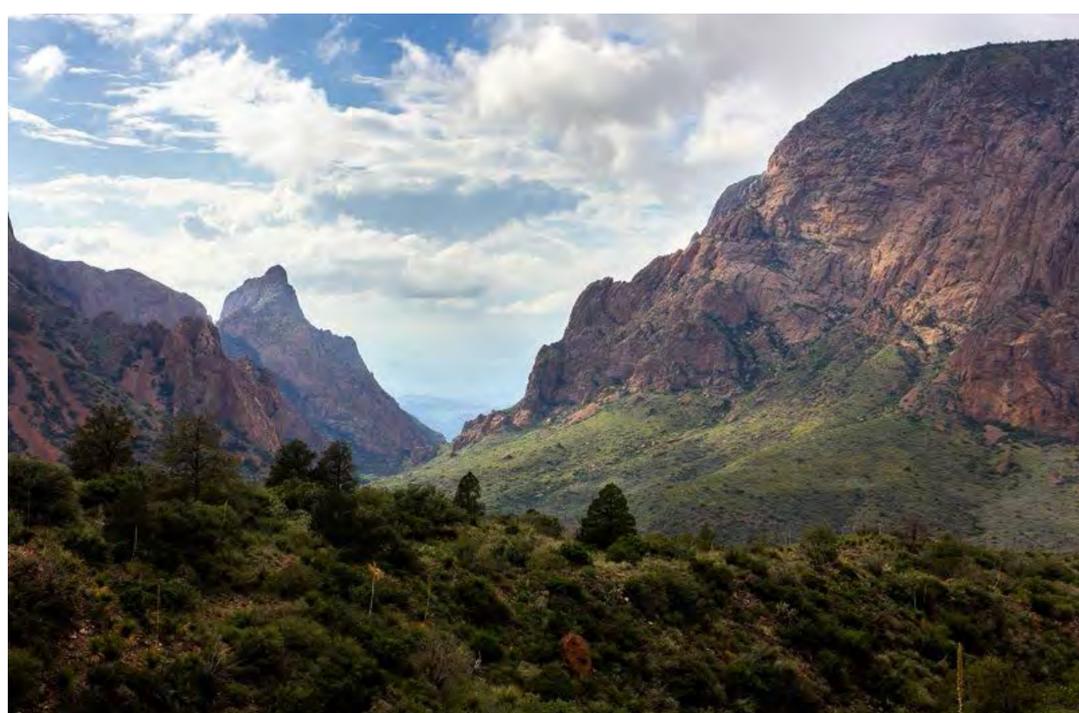
This program will consist of three parts. In the first part Gary will introduce this ecoregion and clarify the many ways in which it differs from the Sonoran desert (and others). He will discuss the climate and a bit of the geology and how it affects plant life and visitation. In the second part he introduces the three largest parks in this ecoregion and offers a few suggestions about what to see and do in each of them. Finally, he will discuss the Big Bend Ranch State park where he currently works, and suggest places to find different species. He will have photos of each of the cacti families that appear in this area. There are just over 50 slides and he hopes to keep the presentation to under an hour.

Gary Nored is a full-time volunteer for the [Big Bend Ranch State park](#) in Texas. He is the unofficial official photographer for the park and is currently living at the Barton Warnock Educational Center near Lajitas, Texas where he is also working on the interpretive gardens on the site. A lifelong writer, teacher, and photographer, Gary has dreamed of volunteering at the ranch since it opened 20 years ago. After 3 years as a volunteer at the Chihuahuan Desert Research Center, he moved to the Bofecillos mountains at Saucedo where he photographed and wrote about the area for 5 years. Today he is exploring the southern parts of the park. Gary wrote two books for the park. One, the Guide to Campsites of the Big Bend Ranch State Park has enjoyed wide public acceptance and appreciation. The second book, Guide to the Main Road at Big Bend Ranch State Park is currently in production. He is now working on a new chapter for the Texas Master Naturalists training manual.

This will be a wonderful presentation that everyone will truly enjoy. Please come and make some new friends, talk with members and guests, have some fun, check out our library books and be sure to enjoy the great refreshments. Be sure to stay until the end of the meeting and get your free plant offered by the TCSS.



Bluebonnets on the Rio Grande



June Follows. . .

Tucson Cactus and Succulent Society

Thursday June 6, 2019 from 7 - 9 pm

"All Hail the Queen: Rescuing the *Peniocereus greggii* var. *transmontanus*"

Presented by Jessie Byrd



Peniocereus greggii has a lifestyle strategy unique from most cactus in the Tucson area that makes rescuing this plant from development sites a special challenge. Learn how to spot the plants in habitat, the correct approach to digging and how to care for wild plants in cultivation.

Jessie Byrd is the **Native Plant Nursery** Manager for Pima County Natural Resources, Parks and Recreation, which specializes in growing and salvaging native plant species for public projects. Jessie believes that using native plants in urban landscapes can help encourage biodiversity while also significantly reducing long-term maintenance inputs. She earned a Master of Landscape Architecture from the University of Arizona and a BA in Biology from Bryn Mawr College. She is the president of the Tucson Chapter of the Arizona Native Plant Society and Tucson Cactus and Succulent Society board member.

This will be an excellent presentation that everyone will enjoy. Please come and make some new friends, talk with members and guests, have some fun, check out our library books and be sure to enjoy the great refreshments. Also, be sure to stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.

July Follows...

Tucson Cactus and Succulent Society

Thursday July 11, 2019 from 7 - 9 pm

NOTE THE DATE CHANGE: not July 4 but July 11

"Chemicals from Cacti and Other Succulents"

Presented by Dr. Art Friedman



There are an estimated 391,000 known plant species of which fewer than 10,000 are succulents. The number of known chemicals exceeds the number of plants by nearly three orders of magnitude. In this presentation, Dr. Art Friedman will examine a group of cacti and succulents from a chemical perspective, noting which plants contain compounds that are deadly poisons and which ones contain potentially life-saving drugs, as well as illegal controlled substances.

While no prior knowledge of chemistry is necessary (although it is helpful to have), a short discussion of how to interpret chemical structures will be provided and how these structures can be used to predict biological properties of the compounds in question.

"Dr. Art Friedman is a native of Philadelphia, but has lived and worked in the midwest for over 32 years. Art graduated from Drexel Institute of Technology with a B.S. in biological science, and after a few years of industrial employment returned to Drexel University where he received an M.S. degree in biochemistry and a Ph.D. in organic chemistry.

Although his career has been primarily devoted to R&D activities in the fields of pharmaceutical, agricultural and environmental chemistry, as well as teaching at both high schools and colleges, Art has also been involved in bringing the joy of chemistry to the masses for over 35 years. He created a program, "The Magic of Chemistry" that was seen by over 30,000 students in four states, and was featured on a nationally syndicated program "PM Magazine".

Art and his wife Erica, have resided in Tucson since January of 2018. He currently is offering a number of science classes through Pima County's Special Interest Programs."

Please come and enjoy knowing about the chemistry of cacti and other succulents. Talk with members and guests, have some fun, check out our library books and be sure to have the great refreshments. Win some plants and also, make it a point to stay until the end of the meeting and get your free plant offered by the TCSS.

August Follows...

Tucson Cactus and Succulent Society

Thursday August 1, 2019 from 7 - 9 pm

"Saguaros: Inventory, Salvage, and Landscape Use"

Presented by Judy Mielke



Saguaro Transplant

Saguaros - iconic cacti of the Sonoran Desert - are often in the path of development, whether it be highways, shopping centers, or houses. Fortunately, the majestic plants are protected by state, county, and municipal laws and ordinances. As a result, many saguaros have been salvaged rather than destroyed. Judy's presentation will cover how to assess plant viability and transplantability during the inventory process. Recent research about salvaging and replanting saguaros will be reviewed. And Judy will offer guidance on placing saguaros and other cacti and succulents in the landscape, from both a horticultural and aesthetic perspective.

Judy Mielke is Senior Landscape Architect at Logan Simpson in Tempe, where she frequently conducts native plant inventories and prepares landscape restoration plans. Judy is author of the award-winning book "Native Plants for Southwestern Landscapes." She is originally from eastern Washington, where she grew up on a wheat farm and cattle ranch. After receiving a degree in Horticulture from Washington State University, Judy came to Arizona to pursue her interest in cacti and succulents. She did a summer internship at Desert Botanical Garden and ended up staying on for nine years as a Horticulturist. Judy received her Masters of Environmental Planning from ASU and is a registered landscape architect in Arizona, Utah, and Washington State. She also is a Certified Arborist and a Certified Water Harvesting Practitioner. Judy is an avid home gardener whose interests include wildflowers, cacti and succulents, plants for wildlife, and flowers for cutting.

This will be a presentation that everyone will enjoy. Please make plans to come and have fun making some new friends, talk with members and guests, check out our library and check out some books! You will truly want to enjoy the great refreshments. You have to also win some of the plants available in our raffle and finally, be sure to stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.



Saguaro on Truck



Gonzo Pass Hwy and Nursery 2-18-08

September Follows...

Tucson Cactus and Succulent Society

Thursday September 5, 2019 from 7 - 9 pm

"Who's Yer Daddy?"

The story of *Echinocereus X roetteri* from the Jarilla Mountains, New Mexico
(With an introduction to introgressive hybridization)"

Presented by Gerald K. (Jerry) Arp Ph.D



The pink Echinocereus



Greenhouse

Resolving the mystery of the "Pink Echino"

Gerald K. (Jerry) Arp Ph.D., Univ. of Colorado, 1972. Dissertation, Studies in the Colorado Cacti. Dr. Arp developed an interest in plants as a youngster while growing up in Colorado in the 1950's. His initial plant interests were horticultural but frustration with some horticultural practices and an abiding interest in plant relationships pushed him into the Science of Botany. By pursuing botany, he hoped to resolve many questions regarding botanical groups of interest to him. In the middle 50's he became fascinated by the flora and fauna of the deserts and plateaus of the American Southwest. Shortly after receiving his Ph.D. in 1972, Dr. Arp's career goals went upside down. When he finally hit ground, he had secured a position at NASA, where he worked with data from Landsat, the world's first Earth Resources remote sensing satellite. He went on to pursue research in areas of surface geochemistry, geobotany, and biogeochemistry as applied to mineral and petroleum exploration. Dr. Arp returned to the world of satellites as Senior Imagery Analyst and Manager of Technical Support for a satellite-based company in Washington, DC. After 911, his expertise was applied to research for a variety of Government agencies, ultimately landing him at White Sands Missile Range, New Mexico. He has since retired to a life of poking cacti and wincing when they poke back. His anonymous retired life ended abruptly when he was chatted up by Mark Sitter at B & B Cactus Farm, during a recent nursery visit and it has been downhill ever since.

Please make plans to come and enjoy this program. Talk with members and guests make new friends. Visit our library and check out some books! During the break, you will truly want to enjoy the great refreshments. Also, try to win some of the plants available in our raffle, then finally, be sure to stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.



Front Garden

October Follows...

Tucson Cactus and Succulent Society

Thursday October 3, 2019 from 7 - 9 pm

"The Desert Moonlight Garden"

Presented by Jason Wiley

Horticulturist, Arizona-Sonora Desert Museum



Most desert dwellers know that during the hot summer, they spend the majority of their time outside during the early mornings and evenings. So why not create a garden that is designed to experience specifically at night? A Moonlight Garden does just that! A well designed Moonlight Garden goes beyond just the sense of sight; it touches on all five senses to create a fully immersive experience. When our sense of sight is compromised, we use the senses of smell, sound, touch, and even taste to fully understand our surrounding environment. When selecting plants for a Moonlight garden (**for a list of Low Desert Moonlight Garden Plant Selections, [click here](#)**), all of these senses should be considered. Not only do Moonlight Gardens benefit people, but many nocturnal pollinators that we have here in the desert as well, including moths and bats. There are also many night blooming plants that are native to the Sonoran Desert including Queen of the Night (*Peniocereus greggii*), Desert Four o'Clocks (*Mirabilis longiflora*), Sacred Datura (*Datura wrightii*), Night Blooming Hesperaloe (*Hesperaloe nocturna*), and many species of native Morning Glories. With so many desert nightblooming plants that attract nocturnal pollinators, the southwest makes a perfect setting for a Moonlight Garden. In this presentation professional horticulturist and designer, Jason Wiley, will discuss his plant selection technique as well as dive into other hardscape and lighting considerations for a Moonlight Garden.

Jason grew up on a sod farm cultivating his career in horticulture which inspired him and to connect people to their environment by creating meaningful experiences in the landscape. He received his Bachelors of Science in Horticulture from Arizona State University and also studied Landscape Architecture at Colorado State University for 3 years. He has worked in public gardens and for 9 years and has been a professional horticulturist for 16 years.

He currently curates the Tropical Deciduous Forest, Cactus Garden, and Agave Garden at the [Arizona-Sonora Desert Museum](#). He self-initiated the transformation of the Cactus Garden which was once overlooked, and is now the most highly visited and photographed garden at the museum. He also designed, proposed, managed, and raised funds for the renewal of the Agave Garden. He is currently working on a project to expand the current Boojum Hill which represents the Catavina Boulder Field in Baja where Boojums naturally grow. His inspiration for this current presentation and hopefully soon to come garden is the purchase of his first house which sits on a blank 1/4 acre, where he will spend most of his time in the evenings.

This will be an excellent program that you will truly enjoy. Talk with other members and visitors and make new friends. Visit our library and check out some books! During the break, you will truly want to enjoy the great refreshments. Also, try to win some of the plants available in the raffle, and be sure to stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.

November Follows...

Tucson Cactus and Succulent Society

Thursday November 7, 2019 from 7 - 9 pm

"'The horror of man and beast': a relatively painless introduction to the
Cylindropuntia (chollas) of Arizona"

Presented by Michelle Cloud-Hughes

Desert Solitaire Botany and Ecological Restoration



In this presentation, Michelle will provide a general overview of the cactus genus *Cylindropuntia* (chollas) and in-depth descriptions for the cholla species of Arizona. She will focus first on cholla of the Tucson area, followed by the other cholla of Arizona. She will also discuss the most common naturally-occurring hybrids, along with recent genetic research and taxonomic changes.

Michelle Cloud-Hughes is a botanist specializing in desert flora and ecosystems. She worked for the Soil Ecology and Restoration Group at San Diego State University from 1997 to 2013 and spent most of those years doing restoration work in the central Mojave Desert at Fort Irwin National Training Center. In 2010 she started her company, [**Desert Solitaire Botany and Ecological Restoration**](#), and since then has been involved in many rare plant surveys and other botanical projects throughout the southwestern U.S. Her main love is *Cylindropuntia*, but she is also fascinated by other cacti, particularly *Echinocereus*, *Grusonia*, *Pediocactus*, and occasionally even *Opuntia*.

This will be the last program presentation for 2019, so please join in welcoming Michelle back to Tucson and thank you all for attending the various programs this year. On November 7, come welcome new members and visitors and make some new friends. Visit our library and check out some books! During the break, you will want to enjoy the great refreshments and also, try your luck to win some of the plants available in the raffle. Stay until the end of the meeting and get your free plant offered to you by the Tucson Cactus and Succulent Society.