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College of Agriculture  
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## Change



There is a close kinship between trees and the written word that extends beyond the intimate relationship between the ink and this printed paper. Writing (and reading) requires of us a higher order of thinking as we attempt to organize thoughts that occur at a rate that exceeds our capacity to speak or write. It is as though our consciousness speeds ahead in all directions unrestrained until harnessed through verbal or written communication. So it seems that reading and speaking help us to channel our values through articulation and thereby assist us in identifying, retaining and building deeper connection to the subject of which we speak and read. Reading of trees, taking time to consider their physical detail, biological complexity and profound capacity to endure, deepens our connection to them and remedies our myopia that tends to create of them a green blurry backdrop to our daily living. Given our dependence on plants for all aspects of our physical, economic and arguably, emotional health, retaining a connection to nature is a prescription which leads not only to sustainable life on earth but clarity of perspective and remarkable joy.

One of the gems in the Campus Arboretum collections is the Krutch Garden. The garden represents the original plant collection established in the first years of the university's existence by Dr. James W. Toomey. Some may wonder why the collection is not, then named for Toomey but for Joseph Wood Krutch. Krutch was a naturalist and gifted writer who described the beauty of and articulated the significance of the desert. Through the power of his written words, Krutch gave voice to the passion for the desert which so many in Tucson shared in the mid-century. They, in turn, advocated for preservation of the historic cactus garden, the epitome of the land grant's commitment to promote land stewardship, and named the garden in his honor. The writings of Joseph Wood Krutch inspired a respect for the natural world that the UA's cactus garden also aims to achieve and which drives the mission of all land grant schools. Words carry such power in defining the values which motivate action. So, read on!

“ True, This! —Beneath the rule of men  
entirely great, The pen is mightier than  
the sword.”

*Edward Bulwer-Lytton* in 1839 for his  
play *Richelieu; Or the Conspiracy.*

In this issue, we will focus on the theme of “Change”. I hope you will enjoy reading about changes happening at the Campus Arboretum – new tours, database upgrades and new student research projects. You will also find helpful tips from experts on pruning (and learn that subtle and gradual change is best for trees) and enjoy ideas of literary finds that may inspire personal change and a secure environmental future.

# Reading

## Book Recommendations

The written word provokes change. Here we share a wonderful list of literary gems created by Yelizaveta P. Renfrolist, who's Catalogue of Everything in the World was published in 2010 by Black Lawrence Press. Her complete list can be found under the title: "The Top 10 Books about Trees that I Read in 2010" in the Jan. 2011 blog at: <http://www.dzancbooks.org/blog/>

- Between Earth and Sky: Our Intimate Connections to Trees by Nalini Nadkarni
- The Tree: A Natural History of What Trees Are, How They Live, and Why They Matter by Colin Tudge
- Petrified Wood: The World of Fossilized Wood, Cones, Ferns, and Cycads by Frank J. Daniels, Brooks B. Britt, and Richard D. Dayvault
- Orange Empire: California and the Fruits of Eden by Douglas Cazaux Sackman
- The Life & Love of Trees by Lewis Blackwell
- The Wild Trees: A Story of Passion and Daring by Richard Preston
- Oak: The Frame of Civilization by William Bryant Logan
- The Big Burn: Teddy Roosevelt and the Fire That Saved America by Timothy Egan
- Wildwood: A Journey Through Trees by Roger Deakin
- The Life of an Oak: An Intimate Portrait by Glenn Keator



## Climate Change Reading

The New York Times recently featured a series of articles on Trees and Climate Change in the Science section. In the Oct. 6 2011 edition you may read about global declines in forest populations and biodiversity. Although, the problem is widespread and significant, there is much each of us can do, should you want to reduce your carbon footprint. The Garrison Institute and the Natural Resources Defense Council provide scientifically grounded recommendations to help you make a personal difference to the world's forests. Read more at: <http://www.garrisoninstitute.org>



# Collections Management

## Major Changes to Our Database Will Improve Records Collection and Public Access to Tree Data

By Tanya Quist and Mickey Reed

Since The University of Arizona Campus Arboretum is comprised of a collection of historic trees integrated into the campus proper, tightly coordinated and precise communication is required across various university entities to ensure the accuracy of tree collection records and proper landscape management. Coordinated communication among campus units is essential in directing collections development, overseeing landscape management and in advocating effectively for tree preservation during construction and planning. The University of Arizona recently introduced an Enterprise Geodatabase, a multi-unit data management system, to facilitate the sharing of spatial data among campus units. To capitalize on the introduction of this new technology, the Campus Arboretum would like to upgrade its existing geodatabase to allow it to integrate with the University's Enterprise system. The Enterprise geodatabase will serve as a central repository of information and will provide information needed for Campus Arboretum management. The upgraded geodatabase will provide a common platform between the University and Arboretum systems and facilitate the exchange of information among the various University Departments who share responsibility for and whose activities impact the landscape. Integrating the Arboretum database with the University Enterprise Geodatabase will promote data-sharing, streamline communication

provide effective decision support and improve planning for the Campus Arboretum as well as many other campus units. Sharing spatial data, maintenance schedules and landscape development plans would improve collections management by providing advance notice of construction, landscape maintenance or other events and activities impacting the collection and greater capacity to anticipate challenges that threaten the tree collections including, construction plans, buried utilities, outdoor events and landscape development etc. Advance notice of these activities will allow adequate time for planning and maximize the probability of success in advocating for tree preservation and proper care. Routine horticultural care and regular tree maintenance would also be enhanced with improved communication with University Grounds Services who support the Campus Arboretum in an ancillary capacity by allowing input from Campus Arboretum staff in supporting the implementation of horticultural best care practices and enhanced record keeping.

Further, beyond improving the management of collections, the integration with the Enterprise Geodatabase would also significantly enhance public access to a broad array of accessions data and campus arboretum programs. A newly designed Arboretum database will offer opportunity to expand its capacity and enhanced storage and public access to additional tree and spatial landscape data. Beyond our current capacity to house records relating to plant origin

and taxonomy, the new database would provide a means to input and organize botanical, horticultural, genomic and educational data including tree characteristics and environmental adaptation, propagation and horticultural care, genetic origin as well as trees within public tours. Expansion of record types within the newly redesigned database will broaden appeal and attract a range of users from residential homeowners, landscape architects to botanists, genomic researchers or biochemists.

Furthermore, the upgrade will be accompanied by the creation of a web interface which will provide a search tool and interactive map that increase ease of use and promote public access to tree data. This web interface will provide a tool to facilitate access to database resources without the technical skill needed to perform queries in a database. Queries will be performed using drop down menus or by selecting search items which are familiar to a much larger audience. Improving ease of use will greatly expand access to the Arboretum's data to a much broader audience. Interactive tools within this web interface will not only allow users to locate trees and all related data from the database but will also provide a means to query for trees by feature or attribute (flower color, size, disease resistance etc), locate tree tours routes, benches, interpretive signs etc. and answer any number of questions using the expanded dataset housed in the database.

# Landscape Management

Change is readily manifest in our landscapes by pruning. I have often been surprised to realize how much damage my little hand pruners can inflict with a few poor cuts or excessive pruning in my over-anxious garden gloves. As Juan Barba, a local certified consulting arborist affirms here (<http://www.juanbarba.com>), good pruning should be imperceptible as gradual changes reduce plant stress and promote longevity.

## Pruning Primer

by Juan Barba

For over thirty years, knowledge has accumulated relating to proper tree pruning. This literature focuses on understanding the tree's response to wounding and negative impacts of incorrect pruning on the tree's ability to balance energy production and expenditure. Trees like all living things are energy systems that require careful regulation of input and outputs. As such, the practice of tree topping, for example, which removes a significant portion of the canopy (the source of energy input), is devastating to the energy balance of the tree. Although advice may adapt to the circumstances, there are a few key points to guide pruning decisions: have a reason to make a cut, make the right type of cut, removal of should be gradual and avoid cutting large branches

### Think before you cut!

There should be a reason for removing living tissue. Because limb loss or wind throw can be so devastating, the first priority for any trim operation should be to reduce or negate tree hazards arising from co-dominant leaders, dense crowns, long, heavy laterals, and lean. After removing hazards, tree health issues should be addressed including removal of dead, diseased or damaged limbs. The third priority to motivate pruning is to address appearance. This requires

an understanding of both the art of tree work and the science of pruning. The fourth reason to prune is to improve clearance by crown raising to removing branches obstructing utility wires, streets, walkways, buildings or views.

### What kind of cut is that?

Under most conditions, pruning trees is done by thinning or reduction cuts, not heading. A heading cut removes the branch tip and forces an unhealthy and unsightly proliferation of lateral branch growth or "suckers". Heading of small stems is acceptable, but has more severe consequences when used on large limbs – that's topping. If the cut branch shows the presence of heartwood, it is too large for a heading cut. In this case, make a cut further into the canopy at a lateral branch attachment near the branch bark ridge and branch collar. A cut made here will heal well, reduces suckering and decay and results in a more natural looking plant. Cuts made at a right angle reduce the surface area of the wound and promote a healthy outcome.

### Not too much!

As an industry, we are often guilty of taking off too much too soon. Trees are an "Energy System"; the leaves make the energy that's used to make cells- to grow branches, roots, and more leaves. If you take off too many leaves, the system is under-powered and begins to crash. Our extreme environment is unforgiving



*Prunus pensylvanica*, commonly known as Fire Cherry is a member of the Rosaceae family native to the Eastern United States. This, one-of-a-kind tree on our campus is nestled into a cool microclimate on the East side of South Hall

in this respect and demands we observe this balance, especially in pruning older, mature trees.

### How much is too much?

ANSI arboriculture standards for pruning (ANSI A-300, part 1), recommend less than 25% of foliage be removed at a time. This is a reduction from the previous standard of 33%. If you routinely take off more than 25%, re-examine your work; you are over-pruning. Palms should not be pruned higher than the lower green leaves –this means leaves should extend below an imaginary line drawn perpendicular to the trunk. Whether it is Lions-Tailing, Lacing-Out or "Opening to Let the Wind Through", if you are consistently thinning more than 25% of the leaves, you are taking off too much. (See the Mesquite before/after photos). Thinning cuts, which remove small side branches, reduce branch girth and strength as these small lateral branches develop like rebar in the main limb to reinforce it. Thinning

removes many lateral buds forcing growth of the terminal buds and resulting in branch elongation. This combination of longer and weaker branches in addition to reduced energy is a recipe for early tree failure (See the Palo Verde photo). ANSI A-300 part 1 and the accompanying handbook, Best Management Practices – Pruning - is available at Western Chapter ISA office, 1-559 784-8733, or wcisa.net.

### Topping is definitely too much!

Topping, promotes infection and subsequent decay and creates structural weakness increasing the risk of limb failure. Severe pruning of this nature also opens the tree to sunburn, promotes branch proliferation and requires more subsequent maintenance pruning. A topped tree must not only divert available energy for wound repair and defense but it must do so without adequate leaves to produce the needed energy.

### Where to prune?

Many Tree Workers have been well trained in Thinning or Cleaning Out a tree. Cleaning removes laterals along major branches and retains foliage only at the branch tips. In extreme cases, cleaning is defined as 'Lacing Out'. This practice limits the plant's ability to respond to stress by removing interior, protected foliage. Under high light of high temperatures, the outer leaves in the canopy shut down but those in the shade can continue to photosynthesis and capture needed energy. Similarly, when temperatures drop, the inner leaves may survive and continue to produce energy when the outer portions are frozen. So, leave the interior leaves to extend energy inputs and promote longevity.

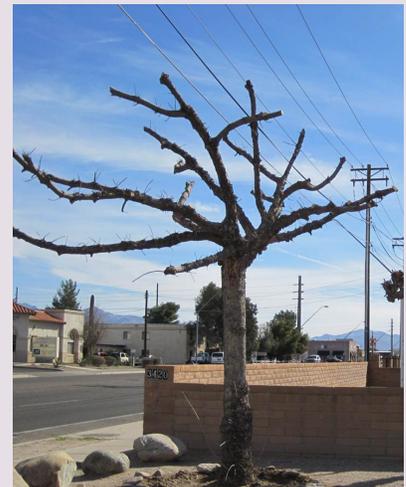
Follow these tips to be a better arborist and extend the beauty and life span of your trees.



This young mesquite tree has had more than 25% of its canopy removed. This introduces many opportunities for pathogens through the cut sites and limits the tree's capacity to produce needed energy for wound repair.



Removing small lateral branches from the interior of the canopy results in reduced girth and elongation of the main structural limbs – a recipe for future limb failure.



Severe heading cuts were made to this tree to reduce the canopy size for clearance under utility lines. This practice, called 'lion-tailing' or 'topping' will cause the tips of these large branches to develop a proliferation of weak branches – which is both unsightly and unhealthy.

# Education And Leadership

## Tree Tours

Tree tours are offered free of charge throughout the month. Tours begin at the Fountain west of Old Main and last 45 minutes. Additional tours and times are available by request. RSVP at: infoarboretum@ag.arizona.edu or by calling Maura in the Campus Arboretum office at: 520-621-7074.

### SUSTAINABLE LANDSCAPES (SUSL)

As the oldest continually maintained public green space in Arizona, the Campus Arboretum values tree selection and landscape management practices that will ensure we continue to thrive in the future. Join this tour to learn how we are implementing sustainable practices and to get ideas of what you can use in your own landscapes.

### ARBORETUM HISTORY (ABH)

Learn the history and the heritage of Arizona's oldest University. Follow our guides as they show you beautiful places and tell you fascinating facts about the growth and development of the University, and how it came out of the sands of the Sonoran Desert to become the jewel of Arizona.

### EDIBLE LANDSCAPES (EDL)

The brain child of a hungry student, this tour identifies edible trees growing in our campus landscape, many of which are native to the Sonoran desert.

### MEDICINAL PLANTS (MDP)

Plants have been used for centuries to treat and remedy all sorts of ailments; on this tour, you will learn about some of the medicinal plants here on campus and their therapeutic properties for human health.

### TREES AROUND THE WORLD (TAW)

Although the UA strives to select only the best adapted plants, for more than a century the campus landscape has also served as testing grounds for trees from climates unlike our own, supplying the Campus Arboretum with a collection of unusual but delightful

specimens. Trees around the World features some of these unique trees and describes their native uses and interesting folklore.

### THE SCAVENGER HUNT (SCH)

This "tour" is designed to engage kids and create in them an awareness for the environment. By reading clues and seeking out the corresponding trees, students not only learn about plants but learn to observe and consider their environment. We hope this tour is a fun and effective teaching tool!



"*Ficus carica*, common fig and *Punica granatum* 'Wonderful', pomegranate, are two highly nutritious and delicious fruiting plants featured in our Edible Landscapes tour. Hungry yet?"

### BRANCHING OUT (BCO)

Branch out and enjoy a new and educational form of campus entertainment. This tour will provide a good introduction to the campus tree collection and provide a new source of enjoyment and rejuvenation—absolutely free with no waiting in line!

Tour Dates	Tours Offered
Nov. 12	Medicinal Plants / Sustainable Landscapes
Nov. 23	Sustainable Landscapes Tour (Visitor's Center 10 a.m.)
Nov. 26	Edible Landscapes / Medicinal Plants
Dec. 10	Arboretum History / Edible Landscapes
Late Dec.	Special Holiday Tour Schedule TBA
Jan. 14	Trees Around the World / Branching Out
Jan. 25	Sustainable Landscapes Tour (Visitor's Center 10 a.m.)
Jan. 28	Sustainable Landscapes / Trees Around the World
Feb. 11	Medicinal Plants / Sustainable Landscapes
Feb. 22	Sustainable Landscapes Tour (Visitor's Center 10 a.m.)
Feb. 25	Edible Landscapes / Medicinal Plants
Mar. 10	Arboretum History / Edible Landscapes
Mar. 24	Branching Out / Arboretum History

## The History of the Joseph Wood Krutch Garden – ever changing but always a symbol of the UA commitment to landscape practices that respect the Sonoran Desert environment. – Tamara McClung



When the University of Arizona was established as a Land Grant Institute in 1891, Dr. James Toumey, a botanist for the Agricultural Experiment Station on campus, recognized the aesthetic value of the unique vegetation that thrives here in the Sonoran Desert and started a cactus display garden that we now know as the Joseph Wood Krutch Garden. In the 120 years since the genesis of the University and its cactus garden, the University's practices have advanced to reflect current and evolving understanding of and attitudes toward landscaping and the natural environment. By 1929, when the garden was moved from the west side to the east side of what is now Old Main, it boasted over 600 species. In its new location the cactus garden stretched from Old Main to Highland Avenue, and was embellished with walkways and benches enjoyed by both students and visitors to the campus. Shortly after the cactus collection was moved, eight boojum were acquired on a Carnegie Desert Laboratory expedition to Baja California and planted in the garden's centerpiece. These boojums are one of the most celebrated species in the garden. One of the original eight remains today. These distinct, tapered trees are now considered rare and protected by the Mexican government, making our prize all the more valuable. During construction on the Student Union in the 1950s, part of the mall was grassed over and much of the cactus display was removed. Some specimens were dispersed to other areas on campus, and some of the more important specimens were consolidated in a central oval. By the 1970s, the rest of the mall was filled in with turf, but the cactus garden in the central oval remained, and can still be enjoyed in the same location between the Administrative and Koffler buildings. In 1980, the garden was dedicated to Joseph Wood Krutch, an influential naturalist author who loved the southwest, and who left his papers with the U of A.

More recently, the Krutch garden has withstood other proposals for its relocation. In 2001 plans were being made for a new Alumni Plaza, which would include a move for the cactus garden back to the West side of Old Main. Inspired friends of the Krutch garden from both the UA Alumni Association and the Campus Arboretum Committee formed a working group to advocate for preservation of the garden. Their efforts resulted in the development of a general care plan and statement of goals to guide future development of the garden. Using these guidelines, more species were added to the garden in 2007 including ocotillo, hedgehog cactus, creeping devil cactus, senitas, and mammalarias. During this "facelift," a previously undiscovered boojum seedling was found.

The Joseph Wood Krutch cactus garden stands as a symbol of the University's responsibility as a Land Grant Institute to encourage land stewardship through research, education, and outreach. We are thankful to be part of preserving this legacy and for the connection the garden provides, reminding us of our heritage and our responsibility as co-habitants of the Sonoran Desert.



Tamara is a junior in the School of Plant Sciences at the University of Arizona. She is a transplant from the East coast who has fallen in love with the Sonoran Desert. She is interested in native plants and has been doing independent study on the history and plants of the Joseph Wood Krutch garden on campus. In the future she plans to continue studying the ecology, ethnobotany, and sustainable food production methods of the Southwest.

## Krutch Garden Maintenance – Diana Vercillo

I have a passion for gardening and for the preservation of nature. This passion motivated me to come back to school to pursue a bachelor's degree in Plant Sciences from the College of Agriculture and Life Sciences at The University of Arizona. I am currently also pursuing a minor in Crop Production. My objective with my degree is not only to obtain knowledge but also necessary skills to advance my career in the field of environmental horticulture.

Over the years I have come to appreciate the importance of education and believe that my education is central to achieving the professional success I desire. I have realized that the more knowledge I acquire the more opportunities I will have to share my knowledge and to help others. I am driven by the motto, "to give back what we have been given". I wish not only to give back to others but to give back something of the beauty nature has given to us. I feel I have been blessed by my experiences in nature. This love and respect for nature fuels my interest in plant science. It's something akin to gratitude that compels me to do as much as I can to understand and to preserve our natural heritage. Every day that I work in the UA campus landscape provides me with opportunities to make positive changes in my life and the world around me. I hope, through my experiences, I can get involved further in the community and find opportunities to teach others.

When I began my studies at The University of Arizona last year, I was looking to gain hands on experience working in the field. The opportunity to work for the Campus Arboretum

has provided me with a variety of experience and skills that will serve me well professionally. Some of my duties in the past eight months have included working alongside the UA



Diana and the ground's crew in the Krutch Garden

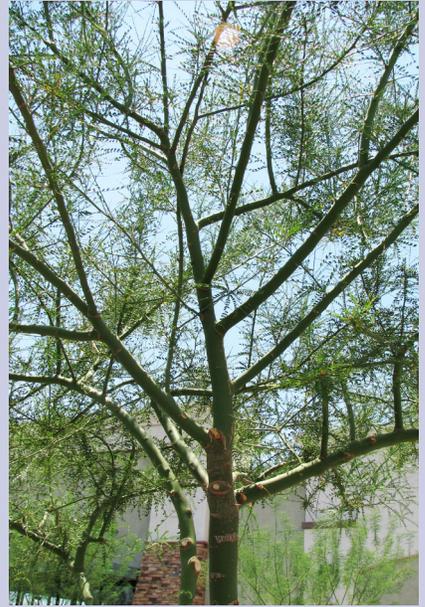
professional grounds maintenance crews maintaining several areas on campus, collecting tree data for inventory and database documentation, installing interpretive signs installation and collecting seed and plant material for research. My favorite responsibility is maintenance of The Krutch Garden. This natural beauty, which houses

many Sonoran Desert natives, has unique maintenance expectations and I'm proud to assist as a steward over this important part of The UA's heritage. I also care for the Salmon Memorial garden, the Taylor Plaza, the succulent gardens behind Physics and Atmosphere and Gould Simpson, the ILC and the Green belt, the historic area of 100 year old olive trees. In maintaining these areas, I have gained a better understanding of plant pruning; learning when to prune and where to prune to ensure optimal plant health and growth. I helped assess the freeze damage on many plants that were affected by the year's extended freeze; this required careful observation and record keeping and finally assessment of recovery potential. Observing and documenting tree growth has helped me recognize many plant species and their key botanical features. All of these duties help me to feel more engaged with my studies. By learning and gaining skills in the classroom and then going out and applying this knowledge to real world situations and challenges has helped build my passion for plants and the preservation and restoration of the natural environment. By gaining hands on experience I am inspired and encouraged to continue my education and work hard to accomplish my goals. With the combination of course work, job experience, and motivation I am on the right track towards a rewarding career in the field of plant science and agriculture.

# CAN A TREE CHANGE US?

"For me, trees have always been the most penetrating preachers. I revere them when they live in tribes and families, in forests and groves. And even more I revere them when they stand alone. They are like lonely persons. Not like hermits who have stolen away out of some weakness, but like great, solitary men, like Beethoven and Nietzsche. In their highest boughs the world rustles, their roots rest in infinity; but they do not lose themselves there, they struggle with all the force of their lives for one thing only: to fulfill themselves according to their own laws, to build up their own form, to represent themselves. Nothing is holier, nothing is more exemplary than a beautiful, strong tree. Trees are sanctuaries. Whoever knows how to speak to them, whoever knows how to listen to them, can learn the truth. They do not preach learning and precepts, they preach, undeterred by particulars, the ancient law of life...So the tree rustles in the evening, when we stand uneasy before our own childish thoughts: Trees have long thoughts, long-breathing and restful, just as they have longer lives than ours. They are wiser than we are, as long as we do not listen to them. But when we have learned how to listen to trees, then the brevity and the quickness and the childlike hastiness of our thoughts achieve an incomparable joy. Whoever has learned how to listen to trees no longer wants to be a tree. He wants to be nothing except what he is. That is home. That is happiness."

— Hermann Hesse



During a recent fire drill at the USA Annex UA staff, forced outside on a very hot summer day, took shelter in the gracious shade offered by a nearby street tree.

## City Trees

by Edna St. Vincent Millay

The trees along this city street, save for  
the traffic and the trains, would make  
a sound as thin and sweet as trees in  
country lanes.

And people standing in their shade,  
out of a shower, undoubtedly would  
hear such music as is made upon a  
country tree.

Oh, little leaves that are so dumb  
against the shrieking city air, I watch you  
when the wind has come, I know what  
sound is there.

# Sponsorship And Donations

Your membership and sponsorship dollars are providing essential support to the Campus Arboretum. Here are a few examples of opportunities being provided with your support.

## ARBORIST TRAINING:

The Campus Arboretum sent the UA Arborists to attend the Desert Horticulture conference this Spring. This allows them opportunity for professional development and a means to maintain their credentials as International Society of Arboriculture certified arborists.

## ADMINISTRATIVE SUPPORT:

The Campus Arboretum recently lost administrative support due to budget constraints at the UA. Chelsea Cox provided expert assistance for the past six months and after her graduation, Maura Jensen is taking over. Both of these students are exemplary, versatile and talented women and provide invaluable support to arboretum programs thanks to your generosity.



Maura Jensen tends to her beloved feline while not busy providing expert administrative support to the Campus Arboretum.

I willingly confess to so great a partiality for trees as tempts me to respect a man in exact proportion to his respect for them.

—James Russell Lowell

## CAROL SECHREST SCHOLARS:

Carol Sechrest liked plants a lot, and she liked just about all kinds of plants. She was an unconventional student, only beginning her studies in plant science in the middle years of her life. She began by joining a garden club in Tallahassee, FL at the urging of her next door neighbor and then continued by becoming a Master Gardener after moving to Tucson. She had found her calling and decided to enroll in the BS program in plant science at the University of Arizona. After so many years away from formal schooling, the program was not at all easy for her, but she persisted and graduated, proudly, with her degree. She loved at least the plant science part of her program. Eventually, she could recognize and name just about any plant on campus and was often pleased to give friends or visitors a tour of campus plant life. But the highlight of her academic program was a study she carried out in an attempt to identify the best varieties of tomatoes to grow in Arizona and the best conditions for growing them. She was generous in offering help to others in maintaining their plants or in rescuing those in trouble. It is particularly fitting that she be remembered by a memorial fund to support plant research by undergraduate students. The Campus

Arboretum gratefully carries on Carol's legacy and passion for plant science research. Many thanks to the Sechrest family and friends who have provided generous support for continuing student research.

## STUDENT RESEARCH:

As an honors project for PLS330 (Plant Propagation) Asher Haug-Baltzell, a senior in the School of Plant Sciences, is the first student to be funded as a Sechrest Scholar. He is interested in determining the impact of propagation media on the health and growth of lettuce plants in a hydroponic production system he's developing. Before beginning his novel hydroponics growing system, Asher will be developing a protocol for producing lettuce seedlings of optimal health and vigor.

## PROPAGATION:

The more things change the more they stay the same! We're preserving the UA legacy trees damaged this winter. Many of the rare trees damaged in the freeze this past winter are beginning to form new epicormic sprouts. These sprouts are being used as softwood cuttings for the Plant Science 330 Plant Propagation lab this Fall.



“The view of the once spectacular “Magic Alley”. A few of our prized plants including the calabash (*Crescentia alata*) and the palo de asta (*Cordia sonora*) from Magic Alley are being propagated from adventitious shoots harvested from their stumps.



THANK YOU  
FOR YOUR  
SUPPORT!





College of Agriculture  
and Life Sciences

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The University of Arizona Campus Arboretum welcomes your support!

Become a member or donate to help provide needed resources for maintenance and preservation of existing tree collections, public educational and outreach activities and future expansion of collections and programs.

Donate online at: <http://arboretum.arizona.edu>

or

Send a check payable to UA Foundation/Campus Arboretum along with this form to:  
Campus Arboretum  
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University of Arizona  
Tucson, AZ 85721

Your contributions are tax deductible.

Please specify where you would like your contribution sent:

- This gift is for the Davison Friends of the Campus Arboretum Endowment.
- This gift is unrestricted and can be used for current projects.

Name: \_\_\_\_\_

Mailing address: \_\_\_\_\_

Phone: \_\_\_\_\_

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