

## **CEAC Volunteers: Emissaries to the Community**

Hydroponics, aeroponics, organic tea fertilizer, worm castings! Ask the average person and most will not know that these terms apply to present day crop production by commercial as well as homeowner growers. In Tucson, many of these terms are already household concepts introduced to the community through the ongoing, dedicated efforts of the CEAC Volunteers. These volunteers act as information bridges from the Controlled Environment Agriculture Center (CEAC) of the University of Arizona in Tucson to hobby gardeners, school children, and to community groups all of whom are eager to learn how to grow plants in recycled containers without soil and in simple environments.

The CEAC Demo House is an environmentally controlled greenhouse allocated to the volunteer group by CEAC's director Gene Giacomelli under the direct supervision of Patricia Rorabaugh who is also the group's mentor. By providing this sophisticated space to the volunteers, CEAC and the College of Life Sciences and Agriculture (CALSA) are fulfilling one of their essential roles as an outreach college to the community. As a land grant institution for the State of Arizona, the UA has as one of its central missions the responsibility of transferring to the citizens of the State knowledge acquired and generated by their research and teaching faculty.

So, what does the volunteer group do and how does it reach out to educate, inform and assist the community in optimizing space, conserving water, and at the same time showing interested people in the community how to grow vegetable crops for a better, fresher taste and healthier living?

Typically, the work of the volunteer group begins by acquiring knowledge from CEAC's expert faculty members via direct interactions, attending CEAC's university level courses, and learning from each other. Arguably, the best source for such knowledge comes from taking advantage of hands-on experiences in the tomato teaching GH mentored by Pat Rorabaugh who has been teaching the 'next gen' of greenhouse growers for more than fifteen years. Volunteers assist Dr. Rorabaugh, in her undergraduate introductory and advanced plant sciences courses, with plant care and fruit harvesting while learning the intricacies of environmental controls, fertigation, pest control, and greenhouse maintenance. Once skilled in these tasks, volunteers are ready to share their knowledge with others in the community. Sharing is accomplished when school children visit the Demo House, when volunteers give talks to community groups, and when volunteers create therapeutic environments for hospitalized veterans and elderly citizens in assisted living environments.

The best way to find out what members of the CEAC volunteer group are doing is to drop in on them any Monday morning when they gather on their own turf, in the Demo House, to germinate seeds, transfer seedlings to various soilless hydroponic systems, spray for aphids and white flies, and to provide TLC to the mature plants. As you enter the Demo House, you will be immediately struck by the lushness of the plants, the aroma of flowers, and the unusual sight of bananas, and

yes pineapples, growing amidst fruiting crop plants, jalapeno peppers, long green cucumbers, and the ubiquitous tomatoes. How do the volunteers manage to grow such a lush variety of plants in such a small space? "It's all about hydroponics" asserts Ed, the group's senior member and database manager.

Ed remembers the early days when the group was first part of the UA Extension's Plant Clinic. Then, CEAC offered the group part of a greenhouse, now known as the Demo House, thereby adding another branch to its own outreach missions to the community.

"I want to grow my own food" insists Ed, explaining that at home he has an enclosed courtyard where he grows herbs and veggies in a 'simple' semi-controlled environment. To do the real thing, he comes to the Demo House and helps steer the group in growing a more extensive array of veggies under soilless conditions but using simple, recyclable "and cheap", he adds, containers.

Deb, the group's leader, has become such "just because I am more pushy" she says with a grin. Yes, Deb knows where things are hidden and how to extract from CEAC what the group needs in supplies, plants, and the fixing of fans and the cooler pads. Deb is not only the moving force behind the volunteer group; she is also their role model for outreach initiatives. Deb's roots with plants go back to her childhood when she had a small piece of land, in the backyard, where she grew plants the traditional way-in soil. Later on she discovered, at CEAC, that you don't need soil "just some chemicals as a nutrient medium" to accomplish the same objective. So, using soda bottles, paint buckets, recycled PVC pipe, and anything else that would physically support a plant, she and her fellow volunteers built simple yet highly effective growing environments using hydroponic methods to grow veggies, flowers, and even mature fig and banana trees, and pineapple bushes. It is a veritable "plant zoo" chimed in one of the other volunteers.

But, back to volunteerism and outreach: Several years ago, Deb with a few other volunteers discovered on the grounds of the VA hospital a greenhouse in the making. In her 'pushy' way, Deb convinced the powers that be to dedicate the VA greenhouse to therapeutic uses by using hydroponic plant growing for and with the patients. So, early in 2011 Deb, with the assistance of Ken and Walt who are also CEAC volunteers, began growing plants in this VA greenhouse much to the delight of the patients. "They like living things and they enjoy seeing how plants grow and how flowers bloom. They even take them to their rooms for decoration" says Deb with a great smile on her face. "I think they feel better" when they visit the greenhouse and when they return to their rooms".

Dee and Brent, former IBM'ers and experts in computer technology, joined the CEAC volunteers about two years ago "to enrich their existing toolkit" in anticipation of a pending assignment through the Peace Corp. They enjoy applying technology to growing plants in hanging pots, in soda bottles and whatever else comes their way "it's a beautiful thing to see plants growing and producing fruit" said Dee.

"Trying to save the world" Says Norm, only half-jokingly, when I asked him about his motivation and interest in being a CEAC volunteer. Actually, he has a very practical approach to trying to provide for society by being a protagonist for the Food Hub, of which the Food Bank is an important component. So, Norm's activities, in growing plants hydroponically and fish aquaponically, are part of his overarching ideal of organizing public initiatives for urban agriculture. Being part of the UA group gives Norm the opportunity to be an emissary to the public thus multiplying the UA's outreach activities.

Growing up in Brooklyn was John's first but arguably most memorable introduction to growing vegetables, seeing goats raised (yes, in Brooklyn, but when was this? Maybe during WWII?), and learning about victory gardens. Now John, living in Tucson, combines these early experiences with knowledge gained at CEAC's hydroponics vegetable growing with an outreach to the UA's Extension Plant Clinic and to looking after preschoolers by being a member of the City's reading program. Together, John has reached out to numerous programs in the community speaking about "just about any topic" and being an emissary of the UA, CALS and CEAC.

Why be a volunteer? I asked Kathie who is still a practicing nurse. "It's fun, it's new, it's part of my DNA" she says without interrupting her watering routine at the Demo House. Kathie believes that "hydroponics is the way of the future" in that one can "grow more in less space and save on water usage at the same time". She sees her role as a volunteer as "part of the UA's outreach continuum" receiving knowledge from CEAC professional, and then turning around and "giving back to the community as much as possible" adds Kathie while showing me the first lush crop of ripening figs.

This never ending story of the activities, motivation and enthusiasm of the CEAC Volunteers, individually and as a group, permeates their activities in reaching out to the public in the name of CALS and the UA. The fruits of their contributions can be clearly seen in the Demo House: tomatoes, peppers, lettuce, flowers, and yes even figs, bananas and pineapples. But, more importantly what is less tangible but even more impactful is the way they convey their collective knowledge from CEAC's faculty and technicians to the community in which we all live. It is truly a labor of love giving back to the community and alerting the community, from school children, to adults, to patients in hospitals, to seniors to the simple yet effective ways of integrating plant care for a healthier way of life.



The Monday Morning 'Inner Circle' in the CEAC Demo House



TLC for Plants growing in a myriad of repurposed soilless containers



This is how you convert a used coffee cup into a planter



Figs and Carnations: signs of biodiversity in hydroponically grown conditions



Desert Pineapples: A new variety?



Breathing in the Oxygen: just one of the benefits of working in the Demo House

*Raphael Gruener, CEAC Volunteer, Aug 6, 2013*