College of Agricultural, Consumer, and Environmental Sciences

Department of Plant & Environmental Sciences
Fall 2020 Newsletter

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Rolston St. Hilaire

Department Head

Introduction

Our spring 2020 newsletter had a photo tribute to our graduating class. We initially envisioned having a normal fall graduation ceremony for the graduates. What a year this has been. In the face of a challenging year, I am pleased with the adjustments that our students, staff, and faculty have made to fulfill our research, teaching, and outreach missions.

To help advance our mission, this year we hired Dr. Dennis Lozada as the new chile pepper breeding and genetics faculty. Dr. Lozada's appointment fills the position left vacant with Dr. Bosland's retirement.

Our long-time administrative assistant, Esther Ramirez, retired earlier this year and one of our fiscal analysts, Jasmine Lopez, transitioned out of the department. Consequently, we have added two new staff members, Sydney Candelario and Diana Sandoval, to replace Esther and Jasmine, respectively. Please see their stories on page 5 of this newsletter.

We continue to realign our curriculum. This semester, we offered a special topics course on hydroponics to meet the heightened student interest in hydroponics. Although this lab-intensive course is challenging to deliver while meeting appropriate health guidelines, the article on page 6 indicates that it is going well.

Ellen Peffley and Randy Farmer, two of our outstanding alumni, were honored this fall. As you read the biographies of these outstanding individuals, I hope you will agree that the Plant and Environmental Sciences department has helped shape their careers. The ranks of our alumni are filled with amazing individuals and we will continue to honor and appreciate their work.

In speaking of amazing individuals, two of our students, Issaiah Abeita and Maria Alvarez Zavala, received prestigious student scholarships. These students join the growing ranks of stellar students who are matriculating in the Plant and Environmental Sciences Department. We are pleased that Maria, a recipient of the prestigious NSF Graduate Fellowship, picked Dr. Guzman's research program as her program of choice. We know that Maria had a choice of where to pursue her graduate studies and we are honored that she chose us.

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NMSU Welcomes New Chile Pepper Researcher

Lozada, working in a chile field, pictured above. *Credit: Josh Bachman, NMSU.*

As New Mexico chile producers braced for the summer harvest season, New Mexico State University welcomed a new chile pepper researcher into its fold.

Dennis Nicuh Lozada, a new assistant professor in the Department of Plant and Environmental Sciences in the College of Agricultural, Consumer, and Environmental Sciences, will lead the NMSU Chile Pepper Breeding and Genetics Program. Housed at the Fabian Garcia Science Center in Las Cruces, he started his new role at NMSU on July 1, 2020. "I am excited to be in this position. It's an answered prayer for me," said Lozada.

Lozada's appointment fills a position left vacant by the retirement of Paul Bosland. Dr. Bosland co-founded the NMSU Chile Pepper Institute, a world-renowned research-based resource center for chile pepper information, in 1992.

In addition to his research work, Lozada will also teach plant breeding and genetics courses to undergraduate and graduate students at NMSU. *Credit: Carlos Andres Lopez.* For full story, go to: https://newscenter.nmsu.edu/Articles/view/14382/nmsu-welcomes-new-chile-pepper-researcher

Professor's Presidency

PES Professor April Ulery has been named the 'President-Elect' of the Soil Science Society of America. The Soil Science Society of America is governed by an elected Board of Directors, who provide the society with vision and strategic direction. They are driven by leaders who have recognized the importance of the society's function in bringing together the knowledge and inspiration to enhance discovery, define soil science, and define its application. Congratulations April!

For more information on the Soil Science Society of America (SSSA), go to: https://www.soils.org/

PES 2020 Outstanding Alumni

Dr. Ellen Peffley Harp, '77, '81, '85

"One of the things I learned from my professors at New Mexico State was to learn the names of students."
~ Dr. Ellen Peffley Harp

Dr. Ellen Peffley Harp grew up in Albuquerque and graduated with her bachelor's degree in horticulture in 1977. After working in private seed industry, Ellen returned to NMSU and earned a master's degree in horticulture in 1981 and a Ph.D. in agronomy in 1985. All her degrees are from Plant and Environmental Sciences. She joined the Department of Plant and Soil Sciences at Texas Tech as a visiting assistant professor in 1984 and was the first woman in the College of Agricultural Sciences and Natural Resources to advance through promotion and tenure to the rank of full professor. She retired in 2008. Dr. Peffley is a Professor Emerita of Horticulture at Texas Tech University. After retiring she was sole proprietor for her gardening business called From the Garden. While at Texas Tech, Ellen won numerous teaching awards including the Chancellor's Council Award for Distinguished Teaching and is the only woman to have been inducted into the Texas Tech Department of Plant and Soil Science Hall of Fame.

At Texas Tech, Dr. Peffley taught horticulture classes such as introductory horticulture, vegetable production, and graduate plant breeding. Dr. Peffley said that one of the things she learned from her professors at New Mexico State University was to "learn the names of students". She made it a priority to learn the names of students even though she taught lecture sections that had 100 to 120 students.

In addition to her outstanding teaching program, Ellen developed a strong research and breeding program. She had research fellowships at the Plant Breeding Institute in Wageningen, The Netherlands and Horticulture Research International in Wellesbourne, United Kingdom. Her research emphases included hydroponic vegetable culture for space travel, guar breeding, developing transgenic cotton lines, and molecular marker development to track introgression of elite germplasm in *Allium*. While on the faculty she generated $3.5 million in external funding, patented a transformation process, registered two guar plant variety protection certificates, and trademarked five onion cultivars. Her research team worked with NASA's Advanced Life Sciences program to provide onions as a sustainable fresh food supply for astronauts on extended missions.

Dr. Peffley, along with other benefactors of the Plant and Environmental Sciences Department, established the Women in Science Endowed Scholarship. She also established the Ellen Peffley Current Use Scholarship. Today Ellen is a weekly columnist and freelance contributor to the Lubbock Avalanche-Journal and Texas Spur newspapers. Ellen enjoys her grandchildren, pets, camping, gardening, reading, and traveling with her husband, Dennis Harp.

Dr. Peffley was honored at the College of Agriculture, Consumer, and Environmental sciences' virtual homecoming event on October 23, 2020.

James F. Cole Memorial Award for Service

Randy Farmer, '76

"I have received more than I have deserved, and I want to give back to help others.
Take business classes. As a graduate, you will always find that a knowledge of business will be advantageous. Then, find a way to give back to your family, friends, community, church, or university. It will make your whole life better. "
~ Randy Farmer

For the past three decades, Randy Farmer has been involved with NMSU as one of its most loyal and committed supporters. Randy's activities are not motivated by the opportunity for financial reward, but rather to build relationships and to serve his family, alma mater and community.

Randy came to NMSU from Los Alamos and has a BS in Agriculture and Horticulture and an Honorary Master's degree in Agriculture. His ongoing contributions to the plant and environmental sciences department aid with student travel, internships and instructional programs. Recently, Randy and his wife Cindy were named Outstanding PES Alumni in the College of ACES, and he was also awarded Citizen of the Year from the Las Cruces Chamber of Commerce in 2002.

The Greenhouse, Inc. in Las Cruces was Randy's landscaping business that was involved in building playground equipment, playing fields, shade structures, and landscaping for the public schools. When he closed the business he was able to donate two acres of boxed trees to the City of Las Cruces. Randy is always willing to hire NMSU students, both before and after they graduate. As a former horticulture student commented, "The list of former employees of The Greenhouse reads like a Who's Who of New Mexico horticulture." Randy is now a partner with Genesis Builders, Inc. helping businesses reshape and grow. Randy is also very involved in his church where he serves as the treasurer and on the leadership team.

A member of the Sam Steel Society, Randy has made major contributions to the NMSU Landscape Garden and served as the driving force for the Landscape Technician Program at DACC. He encouraged and challenged fellow alumni, Dr. Donald Cotter, Dr. John Mexal, and Dr. Emroy Shannon, father-in-law, to implement a plan to endow several scholarships such as the R.W. Ludwick, Watson-Williams, Darrell Sullivan, Bruce Erhard, Deborah M. Widger, and the Ulery Outstanding Woman in Science Scholarships as well as many others. Randy and Cindy have an endowed scholarship that aids 5-6 students in PES each year. Most recently, the couple donated 12 Cedars of Lebanon trees to NMSU to honor the story tellers of the Las Cruces area.

Randy and his wife Cindy have two daughters, Laura and Lisa, all of which are also graduates of NMSU. Randy and Cindy's love story started at a flower judging competition during their undergraduate studies.

Las Cruces Utilities Hosts Tour for NMSU Compost Club

After Las Cruces Utilities (LCU) Deputy Director of Solid Waste Robin Lawrence scraped off the top layer of the compost mulch, she stuck her hand into the pungent pile. She was happy to feel warmth. Members of the New Mexico State University's Skeen Compost Club (Club) lined up to eagerly do the same.

Warmth meant that the compost pile was 'cooking', breaking down the organic material into the beginning of high-quality mulch being made from green yard waste at the Foothills Landfill Composting Facility (FLCF), formerly known as the Old Foothills Landfill, at 555 S. Sonoma Ranch Boulevard.

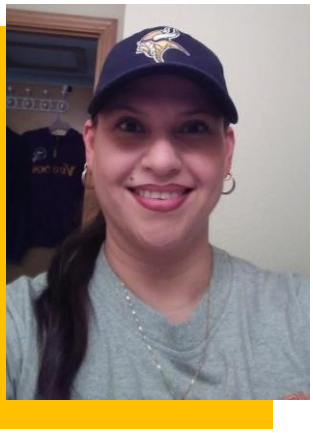
Residents can drop off their green waste, loose or in clear plastic bags, at the facility. They may also place it out for the Green Grappler with LCU solid waste service. The composted mulch is available for free to residents. (Credit: *Cassie McClure*) For more information, go to: https://www.krwg.org/post/las-cruces-utilities-hosts-tour-nmsu-compost-club-upcoming-collaborations

LCU Water Conservation Program Coordinator Rhonda Diaz looks on as Club members Kelt Cooper and Angie Swanson dig into the compost mulch with LCU Deputy Director Solid Waste Robin Lawrence.

New Staff Joins PES

Sydney Candelario:

Hi! I'm Sydney she/her. I have a BA in Philosophy with a minor in Chicano Studies. I'm currently enrolled in online classes and I hope to eventually earn my PhD in Philosophy. I'm very happy to be working in PES, everyone in the department has been welcoming. My hobbies include knitting, playing ping-pong competitively, playing racquetball non-competitively, going to the movies, and taking cute pictures of my dogs.



Diana Sandoval:

I'm Diana. I have an Associate's Degree in Business Occupations and will graduate in December with an Associate's Degree as a Bookkeeping Assistant. I have over 15 years of experience working in Human Resources and am now starting a new career as a Fiscal Assistant, Associate. My hobbies include spending time with my family, going for walks, and riding motorcycles.

A Huge welcome to Sydney and Diana!

Special Topics: Hydroponics

A new course, Hydroponics, was taught this fall by Rachel Gioannini. The idea for it came during her interview in 2018 while eating lunch with undergraduate students. Pressed to say what new courses she could offer, she chose "Hydroponics" as her answer. In an effort to prepare to teach this hands-on course, Gioannini took the Tomato Intensive Course offered over the winter break (Jan. '19) at the University of Arizona. This excellent course taught her the basics of different hydroponic systems and how to run a Controlled Environment Agriculture greenhouse.

The course has exposed the students to many different models of hydroponic systems, from simple to more complex. But first, the students had to start seeds in rockwool to put into the systems they would build. The first systems the students built were simple Mason jar hydroponics, using a net cup suspended in a jar of nutrient solution. The next system was aeroponics, which sprays the root zones of the plants with nutrients. The students designed and built their own systems in 3 teams. Following that was an NFT (Nutrient Film Technique) system which they planted with basil and other leafy greens. They also worked on two different Dutch bucket systems, one planted with cucumbers and one with tomatoes. Students are using the "Lean and Lower" technique to train the plants. They will also build a tower system and revitalize a green wall system left in the greenhouse by a former graduate student.

Gioannini hopes to make the course a permanent addition to the Horticulture curriculum, if there is continuing student demand for the class.

Derek Hay and Samuel Hernandez inspect the roots of their tomatoes, grown in their mason jar hydroponics.

Students mixing up nutrient solution in the greenhouse. (from left: Samuel Hernandez, Derek Hay, Kirsten Rodriguez, Matt Capanna, Giovanni Cisneros [back to camera], Isaac Lopez)

Students inspect the NFT system (from left: Matt Capanna, Giovanni Cisneros, Kirsten Rodriguez, Derek Hay and Samuel Hernandez)

. . .and the award goes to:

Issaiah Abeita received a $2500 scholarship from the Golf Course Superintendents Association of America. This is a competitive scholarship that is known all over the nation. Selection criteria for this program includes academic excellence, work experience, extracurricular activities and potential to become a leading professional in the golf course management industry. For more information, go to: https://www.gcsaa.org/education/scholarships

GCSAA

Golf Course Superintendents Association of America

PES Horticulture Graduate Student Wins NSF Graduate Fellowship. This summer, Maria Alvarez Zavala was awarded a prestigious National Science Foundation Graduate Fellowship. The fellowship is a national highly competitive award which provides a 5-year stipend of $34,000 per year with an additional $12,000 each year for tuition and educational costs. She joined the PES family as a graduate student in Dr. Ivette Guzman's research program in Spring 2020 after graduating from Westminster College in Salt Lake City, UT with a B.S. in Chemistry. Before that, she obtained Triple A.S. degrees in Chemistry, Geology and Physics from the College of Southern Idaho. She is a migrant from Mexico and comes from a family of farm-workers who are still working in the beet and potato fields of Idaho. Her NSF funded interdisciplinary plant science research will focus on prickly pear cultivation practices for medicinal uses as well as monitoring glyphosate residue after application on edible parts. As part of her research, she will be working with the community through the NMSU College Assistance Migrant Program and La Semilla Food Center. For more information, go to: https://www.nsfgrfp.org/