

Cooperative Extension

Yavapai County

Yavapai County Report 2020



THE UNIVERSITY
OF ARIZONA



| Subject | Page |
|--|-------|
| Letter from the County Director | 3 |
| 2020 Executive Summary—Because of Yavapai County Cooperative Extension... | 4 |
| 2020 Educational Programs and Participation Data | 5 |
| 4-H Youth Development—Clubs, Fairs, Activities, and STEM Education | 6-8 |
| Family, Consumer, & Health Science Programs—Food Safety, Nutrition, and Education | 9-11 |
| Agriculture & Natural Resources Programs—Master Gardeners, Horticulture, and Small Acreage | 12-14 |
| Evaluation and Impacts of Selected Programs | 15 |
| Visiting UA Faculty & Staff/Yavapai County Faculty & Staff list/Extension Advisory Board Members | 16 |
| The University of Arizona of Yavapai County Faculty and Staff Photo | 17 |



Sharlot Hall harvesting grapes at the Bianconi Farm. This historic farm was just north of the Granite Dells in Prescott and, for a time, was the location of Arizona’s largest commercial peach orchard (Source: Sharlot Hall Museum Archives).



From the County Director

This Annual Report summarizes the 2020 Yavapai County Cooperative Extension programs and activities which were presented under unique conditions during the beginning of the COVID-19 Outbreak. As this report is being written, COVID-19 conditions have improved in Yavapai County. However, many areas of the U.S. and other countries are experiencing a third wave of infections and lockdowns. Cooperative Extension spent much of 2020 offering educational services and information via remote delivery and email. Our programs offered included 4-H youth development, animal science, agriculture, small acreage farm education, home horticulture, natural resources, and family consumer health sciences. These programs provided grassroots education to 24,768 Yavapai County residents. In addition, 248 citizens served as Cooperative Extension volunteers. These valuable volunteers enhanced Extension programming by helping Cooperative Extension educators deliver relevant educational programs and information to the citizens and communities of Yavapai County. The contribution of these trained volunteers totaled 12,364 hours of service with an estimated value of \$336,301.

Cooperative Extension greatly appreciates the financial support, office space, and services provided by the Yavapai County Board of Supervisors. Yavapai County Cooperative Extension continues to leverage county contributions through collaborations with local partners and securing grant funding. With Yavapai County's continued support, we at Cooperative Extension are confident we can continue to offer high-quality educational programs making a brighter future for Yavapai County residents in what we hope will soon become a post-COVID-19 environment.

Sincerely,

A handwritten signature in black ink that reads "Jeff Schalau".

Jeff Schalau
County Extension Director
Agent, Agriculture and Natural Resources



The University of Arizona
Yavapai County Cooperative Extension
840 Rodeo Dr # C
Prescott, AZ 86305
928-445-6590 ext. 224
jschalau@arizona.edu



Because of Yavapai County Cooperative Extension, in 2020...

- Yavapai County Cooperative Extension **served 24,768 residents** with direct education in 2020.
- Yavapai County Cooperative Extension volunteers contributed **12,364 hours of service valued at \$336,301** (per Independent Sector, 2020 value of volunteer of \$27.20/hr.) serving as Master Gardeners, 4-H Leaders, Food Safety Industry Council and Extension Advisory Board members.
- **170 active Yavapai County Master Gardener volunteers** contributed 9,599 hours of service to their communities reaching 4,808 consumers with science-based gardening information. In doing so, they promoted safe pest management solutions, water conservation, use of appropriate landscape plants, small-scale food production through backyard/community gardening, and other science-based horticultural practices.
- **216 youth were enrolled in Yavapai County 4-H Club Programs.** These youths were supported by 58 volunteer leaders and enrolled in projects which included horse, sheep, swine, goat, steer, rabbit, poultry, photography, leather craft, leadership, dog, robotics, shooting sports, and Cloverbuds.
- **89 school outreach visits were conducted across Yavapai County to conduct STEM** (science, technology, engineering and mathematics) education. Activities reached 2,400 students and averaged 1 hour in length. Activities included hydrology, magnetic fields, agriculture, and space science topics. Post-March, program focus shifted solely to online programming.
- Following the COVID-19 outbreak, the 4-H program focus shifted solely to online programming: Water Awareness Virtual Delivery (WAVE) and Arizona Agriculture Literacy. Additionally, Yavapai County 4-H staff worked collaboratively with the UA state office to deliver STEM programs to youth state-wide.
- **79 food establishment managers completed the in-person 6-hour Professional Food Manager Class** in both Prescott and Cottonwood from January–March 2020. In doing so they increased their knowledge of food safety principles and how to make informed decisions to reduce risk factors and the incidence of foodborne illness in Yavapai County. After transitioning to virtual programming, **56 additional food establishment managers** completed the course from August–December 2020.
- **The 13-member Food Safety Industry Council (FSIC) met 2 times** to identify and address food safety issues in Yavapai County. The FSIC is the result of a partnership between Cooperative Extension and Yavapai County Community Health Services and provides guidance and feedback to the Yavapai County Board of Supervisors.
- Cooperative Extension completed its fourth year of the **Supplemental Nutrition Assistant Program Education (SNAP-ED)** grant through the Arizona Department of Health Services reaching 815 contacts in Yavapai County with nutrition education programming, focusing on low-income families with young children and older adults.
- The **Family, Consumer, and Health Sciences (FCHS)** program continues to partner with Yavapai County Community Health Services on numerous food safety and nutrition education programs including Yavapai Seasonal Harvest, Supplemental Nutrition Assistant Program Education (SNAP-ED), and the Food Safety Industry Council.
- A team of Yavapai County Master Gardener volunteers created and maintained the **Yavapai County Native and Naturalized Plant Database**, an on-line database (cals.arizona.edu/yavapaiplants/) which contains descriptions and multiple photos of 875 native plant species. This site is used by government agencies, schools, universities, non-profits, and other plant enthusiasts and had 126,603 pageviews.
- **The Commercial Horticulture and Small Acreage (CHSA)** program started in December 2019 by Agent Isaac Mpanga to support Yavapai and Coconino County fruit, nut, and produce growers with research and extension programs. A needs assessment was conducted to identify and prioritize program direction (<https://extension.arizona.edu/pubs/needs-assessment-commercial-horticulture-small-acreage-north-central-arizona>).
- **CHSA programs reached 1,616 stakeholders** were reached through site visits, emails and telephone contacts. The CHSA program's annual assessment indicated 83.3% of the participants said the CHSA program was very useful and supportive. One hundred percent (100%) of the respondents said the CHSA program had a positive impact on their production and they are implementing the knowledge gained.



In 2020, our educational programs focused on:

| | |
|---|---|
| 4-H Youth Development | 4-H youth development programs, 4-H volunteer training/support, youth leadership, Science, Technology, Engineering, and Math (STEM), and water resource education and outreach. |
| Family, Consumer, and Health Sciences | Food safety manager certification, consumer education, food preservation, early care education, early brain development, nutrition education, and community leadership. |
| Horticulture | Master Gardener training and volunteer support, insect and disease management, backyard food production, and consumer help desks in the Camp Verde and Prescott offices. |
| Livestock and Range Management | Presenting livestock nutrition, artificial insemination, livestock handling, and range management programs to ranchers, agency professionals, and interested public. |
| Livestock/V Bar V Ranch | Sustainability of grazed rangelands for ranchers and agency personnel, rangeland monitoring education, and access to technical and educational resources. |
| Commercial Horticulture/ Small Acreage | Beginning farmer training and support, well owner education, invasive species management, orchard education, specialty crops, and educational resources. |

Yavapai County Citizens Served in 2020

| Program Area | Educational Outreach | Office Contacts* | Totals |
|---|----------------------|------------------|---------------|
| 4-H Youth Development | 430 | 1,980 | 2,410 |
| 4-H Science, Technology, Engineering, and Mathematics (STEM) | 2,500 | 95 | 2,595 |
| Family, Consumer, and Health Sciences | 2,891 | 5,965 | 8,856 |
| Commercial Horticulture/Small Acreage | 234 | 1,382 | 1,616 |
| Home Horticulture | 4,073 | 4,387 | 8,460 |
| Natural Resources | 167 | 574 | 741 |
| Totals | 10,295 | 14,383 | 24,678 |

*Includes email, phone and face to face.



Youth-Adult Partnerships

Youth-adult partnerships are the heart of the 4-H mission and a guiding principle for how 4-H leaders, staff, and volunteers work with young people. All members of a community have a role in creating a strong and healthy society. Sustained positive relationships between young people and adults support the healthy development and well-being of youth, while also benefiting adults, organizations, and communities. Youth-adult partnerships occur when:

- Young people are seen as assets to their communities as much as adults.
- Adults create ongoing opportunities for young people to share leadership with them in community settings.
- Youth contribute what they uniquely bring to the group and to the community.
- Youth and adults engage as equals in planning, implementing, and evaluating programs that shape the development of youth, as well as their communities.

Yavapai County 4-H Office

During the 2019-20 4-H year, twelve 4-H community clubs within the county were led by fifty-eight adult volunteers and reached over two hundred sixteen youth who participated in projects ranging from livestock and small stock to horse, outdoor adventures, sewing/textiles, and leadership. Currently, 4-H clubs are located in Prescott, Prescott Valley, Chino Valley, Cottonwood, Camp Verde, Dewey and Bagdad. Program Coordinator Shirley Vasovski certified and trained six new volunteers during the 2019-20 4-H year.

Colorado River Small Stock Show (CRSSS)

Eighty-four youth from seven counties participated at the Colorado River Small Stock Show held January 18-19 in LaPaz County. Yavapai County Cooperative Extension staff provided fifty-seven knowledge-based tests for small stock species. In addition, six teams participated in a quiz bowl consisting of thirty-six members. Two hundred sixteen animals were exhibited, while youth participated in one hundred twenty-nine showmanship classes, and fifty-seven judging contests. Yavapai County 4-H is the host of this event in Cottonwood every three years and is scheduled to host again in January 2023. The 2021 show was cancelled, but will be held in Mohave County in 2022.



4-H youth participating in knowledge-based tests at CRSSS.

Show and Sale within Yavapai County

The 2020 Yavapai County 4-H/FFA EXPO Show and Sale was a little different as an online auction option was provided for 4-H and FFA youth due to the COVID-19 mandates and the inability to hold the 71st annual show and sale. The online auction was held April 25-May 1. Members who raised an animal or completed a project could sell their projects at auction. 4-H youth use their profits from the sale to help fund their education and future livestock purchases. The 2020 Verde Valley Fair also held an online auction on May 2nd and was open to 4-H and FFA youth in the Verde Valley. In addition, 4-H members could participate at the Yavapai County Fair Youth Livestock Show and Sale held September 12th.



Prescott Valley Clovers member showing her poultry at the CRSSS.

Leaders' Council

Yavapai County Leaders' Council Executive Committee Officers: Angela Teskey Peterson, Mandy Laipple and Deanna Poppenberger along with Cooperative Extension staff oversee Leaders' Council. The intent of the Leaders' Council is to provide direction and support to all Yavapai County 4-H clubs, programs, and events.



18 USC 707

Horse Committee

The Yavapai County 4-H Horse Committee hosted a horse show on August 8th, and a gymkhana event on August 29th that allowed members to qualify for the State 4-H Horse Show held November 6-8 in Queen Creek. Twenty-three youth participate in 4-H horse projects within Yavapai County.

MoYava 4-H Camp

The 2020 MoYava Camp was cancelled due to COVID-19 concerns. The camp is historically open to Mohave and Yavapai County 4-H youth. At MoYava 4-H Camp, youth learned about forestry, wildlife, fisheries, archery, rifle, and sun safety to name a few. Evaluations indicated that MoYava campers gained many new skills, became more independent, increased their knowledge of natural resource management, and made lifelong friends. The 4-H Camp Curriculum Committee are making plans for a tentative in-person camp to be held the Summer of 2021.

Journey: Opportunity for Leaders of Tomorrow (J.O.L.T)

The 2020 J.O.L.T was held virtually on July 13-17. During J.O.L.T., teens learned and practiced teamwork, communication, and leadership skills.

County Wide Shooting Sports

Yavapai County has several county-wide shooting sports programs for 4-H youth. In 2020, twenty-seven members participated in the shootings sports projects. Eight youth participated in archery; sixteen were a part of the small bore rifle program, ten were a part of the air rifle program, and two were involved with shotgun.



Lonesome Valley Wranglers 4-H club serving holiday meals.



Volunteers judging record books at Granite Creek Park in Prescott.

Community Service

During the 4-H year, club members participated in a variety of community service projects that included serving holiday meals and making over 500 face masks for Sedona Humane Society, Sedona Winds Retirement Community, The Navajo Peoples in Monument Valley, The Hopi Peoples, Verde Valley Sanctuary Battered Women's Shelter, The Old Town Mission, and St. Andrew's Episcopal Church.

Emerging Leadership

Yavapai County had four youth participate in the "Emerging Leadership Event" hosted by the AZ 4-H State Ambassador Team. The one-day event was held in December 2019.

4-H Youth Recognition

Jordyn Woodburn was honored as the Eugenia Scott and Ralph Rogers Hawthorne 4-H Scholarship recipient and **Olivia Williams** was honored as the Marge and Gene Bayless Scholarship recipient by the Arizona 4-H program for their efforts in 4-H and FFA. The award recognition event was held virtually. In addition, **Ellyn Peterson** was chosen to represent 4-H at the Leadership Washington Focus. **Addie Kennedy** was also recognized for her contributions on the JOLT Teen Leadership Committee that hosted a virtual experience for JOLT 2020 (Leadership Camp). **Olivia Williams** was also the recipient of the Frank A. and Margaret S. Lane Trust Fund Scholarship which benefits 4-H youth in the Verde Valley.

Record Books

The 4-H program has a long history of recordkeeping. In 4-H, young people keep records of their activities, events, profits and losses, skill development, learning experiences, and much more using the 4-H Record Book. In October, ninety-one 4-H members turned in 4-H Record Books for judging by ten adult members of the community.



Yavapai County STEM Programs

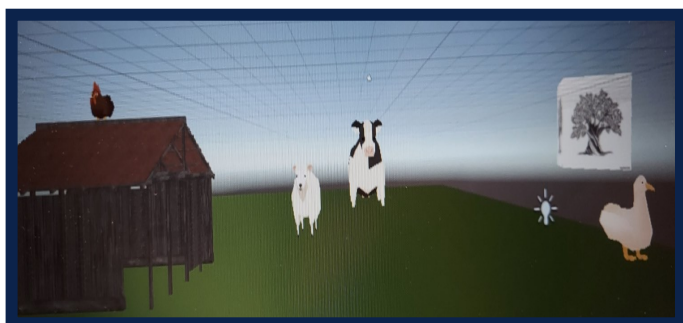
4-H is inspiring the next generation of inventors, entrepreneurs, and problem-solvers by giving youth plenty of opportunities to try their hands at real world science. Science, Technology, Engineering and Mathematics (STEM) projects provide science enrichment opportunities connecting kids to the University of Arizona and 4-H through science outreach programs.

Program Goals

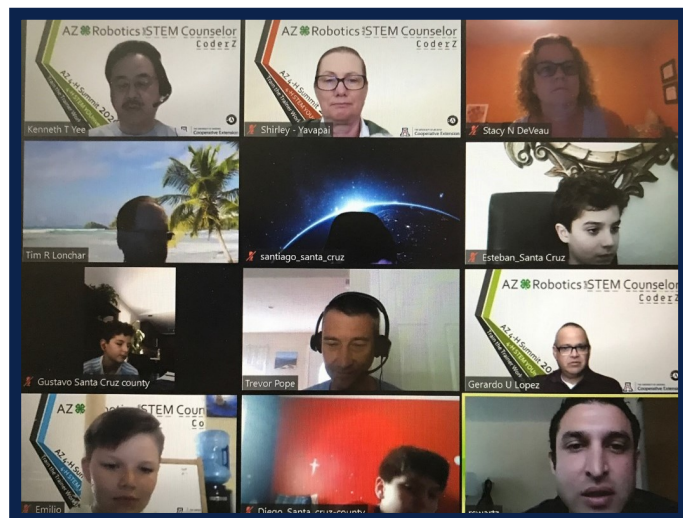
- Serve Yavapai County youth through STEM outreach opportunities.
- Collaborate with UA state 4-H faculty and staff to deliver STEM programming statewide.
- Collaborate with STEM stakeholders to strengthen STEM literacy across Yavapai County.

STEM Outreach

The Yavapai County 4-H Program Coordinator Sr., Stacy DeVeau, conducted 89 STEM outreach visits, both in formal school and informal settings, both in-person at the start of the year, and online for the remainder. Programs were presented in schools, libraries and homes. A variety of STEM topics, including magnetic fields, modeling lunar phases, and the solar system were offered in-person, along with the Wild over Water (WOW) Program. Virtual programming has focused on a revised water education program: Water Awareness Virtual Education (WAVE) as well as Arizona Agriculture Literacy. WAVE consists of four lessons aimed at improving students' understanding of 1) how water moves and is used in Earth's natural water cycle, 2) watersheds and watershed protection, 3) water usage and conservation, and 4) Prescott's urban water cycle. All 2020 programs reached 2,400 youth across Yavapai County. While 2020 presented challenges it also provided unique opportunities. Arizona 4-H faculty and staff worked collaboratively on several virtual programs, including the 4-H National Youth



Screenshot of the Augmented Reality (AR) Floating Farm program.



Counselors and youth attending the Virtual CoderZ Robotics Camp.

Science Project: Mars Base Camp, 4-H STEM at Home, CoderZ Virtual Robotics, and a Floating Farm Augmented Reality project for our collective stakeholders, reaching a total of 77 registered youth and 30 educators, 6 of whom were from Yavapai County.

AZ 4-H STEM YOUiversity Floating Farm Camp

The Augmented Reality Floating Farm Camp 2020 was part of a virtual STEM YOUiversity program. Augmented Reality (AR) is a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view. For this week long camp experience, 4-H members were able to bring a simulated farm to life and explore both programming, computer science, and their 4-H project in the backyard together. The world's reliance on technology grows, even in the context of agriculture. This camp brought both agriculture and computer science technology together. Students learned the basics of AR, history, and to create a virtual farm using the following free online software: Unity; Tinkercad; and Vuforia.

4-H Robotics Camp

The University of Arizona hosted a 4-H Camp called STEM YOUiversity. At STEM YOUiversity, youth learned the CoderZ program which is compatible with Mindstorm Robotics kits. 4-H Robotics provides hands on experience for youth in robot design and programming. Attendees consisted of twenty-two youth, seven youth leaders and thirteen adult (staff and volunteer) counselors. The event was held six hours every week during the month of June.



Family, Consumer, & Health Sciences (FCHS)

Cooperative Extension works to strengthen families, promote healthy lifestyles, wise financial decisions, and develop community leaders by taking our programs to community centers, schools, churches, and other venues to reach different audiences. These programs are conducted by University of Arizona Agriculture, Life & Veterinary Sciences, & Cooperative Extension (ALVSCE) county-based agents and campus-based extension specialists from the Norton School of Family and Consumer Sciences (NSFCS) and the Department of Nutritional Sciences (DNS). In Yavapai County, the FCHS program includes food safety, food preparation, local food systems, early childhood education, Child Care Health Consultation, Supplemental Nutrition Assistance Program Education (SNAP-ED) and the Diabetes Prevention Program (DPP).

Certified Professional Food Manager (CPFM)

In 2020, 135 Yavapai County food establishment managers were trained through the Prometric Certified Professional Food Managers' (CPFM) program. The nationally recognized, six-hour certification course aligns with the 2017 FDA Food Code. The Yavapai County Environmental Health Department requires the Food Safety Manager Certification. Cooperative Extension's training helps restaurant managers and employees increase their knowledge of food safety principles and make informed decisions to reduce risk factors and foodborne illness incidence. The course was offered in person January - March 2020 with 79 people completing it and then transitioned to a virtual format August - December 2020 with 56 people completing the course. The 2020 "pass rate" for the in-person exam was 93.7%. 100% of CPFM post-exam survey respondents evaluated the quality of the training as "good" to "excellent," and 96% of in-person CPFM post-exam survey respondents felt that the training materials and presentation prepared them adequately for the exam. 78.6% of in-person CPFM participants increased their overall knowledge about food safety practices as in pre-post test scores.



Aimee Novak, Food Safety Program Coordinator, preparing a melon and herb salad during the video titled "Refrigerator Storage of Perishable Items" featured on our Youtube Channel.

Yavapai County Food Safety Industry Council (FSIC)

The FSIC is made up of thirteen appointed members, ten of whom are industry representatives (two from each of the Board of Supervisors Districts) and three community representatives at large, as well as ex-officio members from Yavapai County Community Health Services and the University of Arizona Cooperative Extension. In 2020, the FSIC:

- Met to conduct business four times via video conference.
- Approved one new issue of the Food Safety Scoop education newsletter written by Yavapai County Cooperative Extension and mailed to all licensed food establishments in Yavapai County (approximately 1,200 establishments).
- Organized information in conjunction with the Health Department requested from the Board of Supervisors for the: Restaurant Recovery and Reopening in Yavapai County (COVID-19 guidance).
- The FSIC and the Yavapai County Board of Supervisors recognized 279 eligible licensed food establishments in Yavapai County as "Golden Plate Award" winners, indicating they had no critical violations during inspections during the year. This is an increase from 205 winners in 2019.

Food Safety Community Presentations

After the suspension of in-person programming, FCHS faculty and staff produced and filmed educational food safety video series to meet requests from community members. Videos were uploaded to the Yavapai Cooperative Extension YouTube site and the main Cooperative Extension site. There were 486 total views of food safety videos between March 2020-December 2020.

Community Food Preparation/Culinary Classes

- In 2020, FCHS faculty and staff offered three in-person food preparation and culinary classes for community members between January and March 2020. Courses offered throughout the year included "Advance Food Preparation" and "Cooking with Spices." The classes were attended by 92 community members. Following each of the classes, attendees completed a survey: 100% of attendees surveyed rated the classes as Good to Excellent, and 81% increased their level of knowledge about the class topic.
- After the suspension of in-person programming, FCHS faculty and staff produced and filmed educational culinary video series to meet requests from community members about cooking at home. Videos were uploaded to the Yavapai Cooperative Extension YouTube site and the main Cooperative Extension site. There were 765 total views of culinary videos between March 2020-December 2020.

Supplemental Nutrition Assistance Program Education (SNAP-ED)

The goal of the SNAP-ED program is to improve the likelihood that persons eligible for SNAP will make healthy choices within a limited budget and choose active lifestyles. Yavapai County Cooperative Extension SNAP-ED focuses on providing nutrition education to young children, their parents, and older adults through classroom and community education, food demonstrations, gardens, farmers' markets, and Farm-to-Fork initiatives. In 2020, the program reached a total of 815 contacts and completed its first 5-year grant cycle and was awarded another 5-year grant that began October 2020. Due to COVID-19 pandemic, programming focused on train-the-trainer models, providing virtual support for early education staff and parents, and shifted priorities to increasing access to food through emergency food mapping and food sharing events at Head Start Centers.

Nutrition Education Classes/Activities

- Participated in twelve community sponsored events in Yavapai County reaching (virtually engaged with) a total of 698 community members.
- Taught a six-session adult gardening and nutrition education series called "Seed to Supper" two times via Zoom and reached ninety-seven adults.

In addition to nutrition education classes and activities, SNAP-ED focuses on supporting policy, systems, and environments that encourage healthy choices. In 2020, the program:

- Conducted the 3rd annual Color Me Healthy training with Northern Arizona Council of Governments (NACOG) Head Start and Coconino, Apache, and Navajo AZ Health Zone staff. Trained ten Yavapai Head Start staff.
- Between January–March 2020, Yavapai County Head Start centers submitted thirty-six monthly nutrition education activity reports.
- Conducted seventy-eight different activities with the children in their centers including taste tests, songs, fruit/vegetable picture cards and circle time activities
- Spent twenty four and a half hours conducting nutrition education, accounting for 636 nutrition education contacts with the children in their center.

COVID-19 Pandemic Response to Increase Food Access

- Participated in the COVID Community Response event hosted by The Launch Pad Teen Center to provide information about food access and resources (included other community partners).
- Coordinated four Food Sharing Events with donated produce from the Prescott Farmers Market and local farmers. Distributed 157 food boxes to low-income families, children, and seniors.
- Coordinated with Arizona Department of Education,

Prescott Unified School District, City of Prescott, and the University of Arizona Cooperative Extension to qualify Cooperative Extension location in Prescott as an emergency school feeding site due to COVID-19.

- Partnered with Pinnacle Prevention, Prescott Farmers Market, and Good Samaritan Village Towers (a HUD housing site) to distribute Farmers Market Nutrition Program (FMNP) food valued at \$930 to benefits to senior residents over two events. These events helped seniors maintain social distancing and still receive benefits.
- Coordinated GIS mapping of Emergency Food Locations in Yavapai County with the help of Manzanita Outreach, Yavapai County Educational Services Agency, Yavapai County Community Health Services, and the Norton School's Community Research Evaluation & Development team.



The Farmers Market Nutrition Program (FMNP) packed and distributed fresh produce from local farms to senior residents.

University of Arizona Cooperative Extension – National Diabetes Prevention Program

In January 2020, FCHS began the second cohort of the Prevent T2, part of the National Diabetes Prevention Program (NDPP) supported by Centers for Disease Control and Prevention (CDC). Prevent T2 is a 12-month, 26-lesson lifestyle change program that focuses on healthy eating, increasing physical activity, and reducing stress. The specific goals of the program are for participants to 1) lose 5% of their initial body weight, and 2) reach 150 weekly minutes of physical activity by the end of twelve months. The second Yavapai County cohort of nine participants began the program in January 2020 (in-person January – mid-March, switched to Zoom mid-March through the remainder of the year). The program had 100% retention rate after six months and an 83% retention rate after one year. The group reported an average of 360 weekly minutes of physical activity per participant. The average weight loss for participants completing all twelve months was approximately 5.7% of their initial body weight and the group as a whole lost a total of seventy-five pounds.

Child Care Health Consultation

Beginning July 1, 2020, Yavapai County Cooperative Extension was the new agency responsible for the First Things First Yavapai Region Child Care Health Consultation Strategy. A Child Care Health Consultant (CCHC) provides consultation, technical assistance, and training to child care centers, home-based providers and preschools to promote safe and healthy learning environments for young children and staff. In November, Marissa Enderle was hired as our new CCHC in Yavapai County. Marissa is responsible for providing services to over forty Quality First childcare sites in the Yavapai Region.



Marissa Enderle, Childcare Health Consultant

Marissa Enderle is the Child Care Health Consultant for the Yavapai Region. Marissa grew up in a small town outside of St. Louis, Missouri. Marissa received her Bachelor's degree in Human Development and Family Studies at the University of Utah in 2017. Marissa has gained experience through working in a child care center while completing her undergraduate studies. Marissa has worked with various populations throughout her life from completing a year of service with AmeriCorps VISTA in rural Utah to working with Native youth in Arizona. Marissa will receive her Master's degree in Health Psychology in May 2021.

CCHC Supervisor Hope Wilson participated in twelve virtual collaboration meetings with Quality First Coaches and childcare sites in the Yavapai Region to review COVID-19 Health and Safety Questionnaire and discuss re-entry plans and policies.

Better Together Northern Arizona Learning Collaborative

This grant-funded project administered by the Arizona Department of Health Services is part of a joint initiative by Nemours Foundation and the University of North Carolina to support improvements in childcare program practices and policies for healthy eating, breastfeeding support, physical activity, and screen time. This initiative utilizes the online assessment and planning tool GoNAPSACC (Nutrition and Physical Activity Self-Assessment for Child Care) to deliver the Better Together curriculum in grant-funded states to help childcare sites make health improvements.

During Fall 2020, five virtual trainings about child nutrition were completed by all NACOG Head Start sites as part of the Northern Arizona Learning Collaborative (Apache, Coconino, Navajo and Yavapai Counties). All sites had leadership teams made up of one site director and one on-site staff member. All trainings had an average of seventy-five participants. Hope Wilson was the trainer and technical support for Yavapai County with eleven Head Start sites participating in the program. All Yavapai County sites completed their child nutrition self-assessment in 2020 and 82% of these sites identified and recorded at least two new goals and action plans to improve child nutrition in their centers.

Early Childhood Health and Education Community Events/Education

In-Person

- Kindergarten Fair: A hands-on gardening activity for young children and their parents/caregivers. Hosted by Arizona Children's Association and First Things First at the Yavapai College Prescott campus on February 1, 2020.
- Serving Up the Rainbow!: An education session for childcare providers and parents about early childhood nutrition and picky eaters while children did a vegetable rainbow activity. Adults and children taste tested different color vegetables. Conducted in partnership with Arizona Children's Association and First Things First at Valley Learning Center in Chino Valley on February 22, 2020.

Virtual

- Do You Know Where Your Vegetables Grow?: A nutrition and literacy activity for parents and young children focusing on how vegetables grow, trying new vegetables, and recipes and tips for cooking with young children. Conducted in partnership with Arizona Children's Association and First Things First. On October 20, 2020.
- Participated in the Verde Valley Early Childhood Networking Event hosted by Healthy Families at Verde Valley Medical Center on November 19, 2020.



Yavapai County Master Gardener Volunteer Program

The Yavapai County Master Gardener Volunteer program teaches engaged citizens to become valuable horticultural volunteers in their communities. Cooperative Extension Agriculture and Natural Resources (ANR) Agent Jeff Schalau taught and coordinated the 2020 Master Gardener training course in Camp Verde and managed the program in conjunction with Mary Barnes, Master Gardener Volunteer and ANR Program Coordinator. The training was shifted from face-to-face meetings to an online format on March 17, 2020.



2020 saw a large increase in backyard gardening and many practices were shared in the Backyard Gardener and Yavapai County Master Gardener Facebook Page.

Following the 2020 training session, twenty-eight class members became Associate Master Gardeners. The training course is offered each Spring and alternates yearly between Prescott and the Verde Valley. After volunteering fifty hours, participants become Certified Master Gardeners. Each subsequent year, Master Gardeners provide a minimum of twenty-five hours of volunteer service and six hours of continuing education to maintain their certification. The Master Gardener Help Desks in Prescott and Camp Verde also provided science-based horticultural information to Yavapai County residents.

Yavapai County Master Gardeners shifted quickly to online help desk assistance and opportunities for face-to-face programming was limited in 2020. Master Gardeners continued to volunteer at some outdoor venues and maintained the landscaped area at the Camp Verde Cooperative Extension Office. Master Gardeners did not conduct their usual outreach activities at farmers markets and other events. The annual July Monsoon Madness Plant and Yard Sale was cancelled; however, the Master Gardener Speaker's Bureau learned how to utilize Zoom technology to provide educational information to the public. Yavapai County Cooperative Extension continued to have one of the most ambitious and successful Master Gardener Programs in Arizona.

In 2020, 170 Master Gardeners contributed 9,599 hours of volunteer service to citizens and institutions of Yavapai County. The Speakers' Bureau offered twenty-seven presentations and reached 739 residents while the Master Gardener Help Desks in our Camp Verde and Prescott offices assisted residents via email. Educational contacts included 3,045 face-to-face contacts, 79 phone contacts, and 417 e-mails. Master Gardeners also provided on-site assistance and education to three community gardens, four school gardens, two museums, a hospital, and a zoo using social distancing and other CDC best practices.

Backyard Gardener Newspaper Column

ANR Agent Jeff Schalau has authored the Backyard Gardener since 1998. The Backyard Gardener is a weekly gardening column that appears in four Verde Valley newspapers (19,500 combined circulation) and has also appeared every week in the Prescott Courier newspaper (13,000 circulation). Each column is sent out to Twitter (659 followers) and posted to the Yavapai County Master Gardener Facebook page (1,254 followers). Mr. Schalau was also invited to share his weekly newspaper columns with the National Extension Master Gardener Facebook page (87,542 followers) each week. He also maintained the Backyard Gardener web site which contains all columns written from April 1998 to the present. The site is searchable, has a chronological archive, and contains a clientele feedback form which generates many e-mail questions/comments/interactions each year. The web site contains over 1,169 columns and had 386,707 page views during 2020. This is a major marketing tool for county horticulture programs/events and the website is used extensively to answer client e-mail questions. Home food gardening interest was higher than ever in 2020 due largely to the pandemic. Visit the website at <http://cals.arizona.edu/yavapai/anr/hort/byg/>.

Yavapai County Native and Naturalized Plant Database

Master Gardener Sue Smith continued to lead a team of Master Gardeners in maintaining and adding to the Yavapai County Native and Naturalized Plant Database (YCNNDP). Using her skills as a former eBay programmer, Sue and her team have photographed and described 875 plants on the site. The YCNNDP website had 126,603 page views in 2020. The website is located at <http://cals.arizona.edu/yavapaiplants/> and is widely used by both native plant hobbyists and professional land managers.



Homepage of Yavapai County Native and Naturalized Plants.

Program Goal

The Commercial Horticulture and Small Acreage (CHSA) program started in December 2019 to promote sustainable local food production in Yavapai and Coconino Counties by supporting commercial growers with science-based research through extension programming.

In 2020, the CHSA program reached 1,616 stakeholders through emails and telephone contacts (1289), on-farm and in-person contact (234), and ninety-three followers on Instagram. From the annual assessment of the CHSA program, 83.3% said the CHSA program was very useful and supportive, while 16.7% said the CHSA program was somewhat useful and supportive to them. 100% of the respondents said the CHSA program had a positive impact on their productions, and they are currently implementing the knowledge gained or plan to implement it in the future.

Needs assessment and COVID-19 surveys

To understand stakeholders' needs, the CHSA program conducted a needs assessment from January to April 2020 after going through the University of Arizona Institutional Review Board (IRB) review and approval process. The needs assessment identified research and extension needs of commercial growers in both Yavapai and Coconino Counties, and served as a baseline for programs with a focus on regenerative and sustainable agriculture practices. A feedback session was organized to share the assessment results to stakeholders on the theme "Commercial Horticulture and Small Acreage in Northern Arizona: Opportunities, Current Needs and Available Resources for Sustainable Local Food Production" with thirty-seven participants. The full report is available at <https://extension.arizona.edu/pubs/needs-assessment-commercial-horticulture-small-acreage-north-central-arizona>.

The COVID-19 pandemic outbreak disrupted all activities including research and extension programs. From April to June 2020, another IRB reviewed and approved survey on the theme "effects of COVID-19 on Farmers and Ranchers and how they responded" was conducted. The study helped identify what stakeholders needed for better support and decision-making during the pandemic. Both surveys were presented at the University of Arizona Cooperative Extension 2020 Annual Conference on the theme "The role of small-scale farming on sustainable local food production and the effects of COVID-19 pandemic on agriculture activities in Arizona". The session was attended by seventy participants and scored 9.2 out of 10 for the presenter and 9.4 out of 10 on content.

Small-scale Farmers Colloquium and farm visits

Due to the COVID-19 outbreak, which limited in-person meetings, a free monthly series called Small-scale Farmers Colloquium (SFC) was presented by local farmers and faculty members on soil fertility and health, plant disease, pest management, and marketing with 127 attendees participating. On-farm visits were made with 234 contacts and complemented the SFC to allow more familiarity

between the program and the growers. The CDC guidelines were followed during all farm visits.



Several varieties of kale growing at Whipstone Farm.

On-farm and greenhouse trials with producers

There is limited scientific data on local productions which farmers need most. More was invested into generating local data that what is relevant to the growers. A soil map of the DK Ranch, a location for future field demonstrations, was completed. Also, two on-farm field trials were conducted with two growers: Whipstone Farms in Paulden and Alcantara Vineyards in Camp Verde.

- At Whipstone Farms, a mixed summer cover crop trial under high tunnel was conducted in August and September 2020 to determine the best earliest possible time to terminate the crop with easy management and maximum benefits. This trial was necessitated because of a soil-borne disease observed in the high tunnel with continuous mono-cropping without fallowing and crop rotation. The mixed cover crops (buckwheat, teff grass, and cowpea) helped break the disease cycle and increased soil fertility and biodiversity.
- From September to December 2020, a collaboration was made with Alcantara Vineyards to test grape pomace composting alternatives of the region to convert the waste that ends up in landfills into valuable resources for soil amendment. Currently, three alternatives are being investigated with grape pomace as a soil amendment: aerobic composting, anaerobic composting, and solarization. This compost trial has generated many stakeholders' interests with two proposals submitted in collaboration with the growers for funding, which will allow more investigations to turn the waste into useful resources for farmers and reduce environmental waste among the growing wineries in the Verde Valley.
- A soil map for the University of Arizona Cracchiolo DK Ranch Experiment Station was completed to give baseline data and management practices' effects on the soil for future research and extension activities. A factsheet has been accepted for publication at the University of Arizona Cooperative Extension on the topic "Poultry manure effects on soil minerals in flood irrigated sandy-loam pastureland."

Farmer Testimonies

Three farmers testified to the CHSA program's direct impact:

- Schaffer Farms of Paulden became Certified Naturally Grown after Issac inspected their farm and made recommendations. After a referral to Marques Munis of the Prescott Valley Natural Resources Conservation (NRCS) office, they were approved for the NRCS High Tunnel System Initiative scheduled to begin next year. Upon completion, this project will improve winter crop productions immensely.
- Blooming Reed Farms of Paulden received COVID-19 relief funds for small farms after being referred to Arnie Schlittenhart (USDA-FSA director). After a referral to Eric at Steadfast Farms in Phoenix, a BCS tractor purchased on the Pinnacle grant will be delivered in the near future to enhance farm operations since they are just starting and have no equipment.
- Whipstone Farms of Paulden had soil-borne disease issues in one of the high tunnels and a diagnoses was made in collaboration with Bindu's lab at the University of Arizona Yuma Ag Center. Isaac discussed cover crops as an additional cropping cycle which they have implemented.

Publications

Publications are part of research and extension programming that always makes resourceful materials available to growers and other stakeholders, especially in a pandemic situation where in-person meetings are limited. Eleven publications were completed or accepted as peer review journal articles or factsheets.

Conference Presentations

Attending conferences and making presentations is key for networking for future collaborations and making the CHSA research and extension programs popular. Two oral presentations were made at:

- American Society of Agronomy, Crop Science Society of America, Soil Science Society of America International



Winter wheat growing at Schaffer Farms, Paulden, AZ.

Annual Conference on the topic "Innovative Fertilization Strategy-a Potential for Improving Performance of Plant-Growth Promoting Microorganisms."

- The University of Arizona Cooperative Extension Annual Conference on the topic "The role of small-scale farming on sustainable local food production and the effects of COVID-19 pandemic on agriculture activities in Arizona" and a poster on the topic "Regenerative and Sustainable Agriculture: The Interest of Small-scale Growers in Northern Arizona."

Professional Development and Training

Professional development on the job is important to be current and innovative in applying new skills set and expertise to once daily role to enhance impact. Isaac completed his Ph.D. in Agriculture Science-Agronomy from the University of Hohenheim, Germany along with certificate courses in 1) Researcher Management and Leadership Training from University of Colorado, 2) Sustainable agriculture land management from University of Florida, 3) Managing Social and Human Capital, Introduction to Marketing, and Introduction to Financial Accounting from University of Pennsylvania as part of a Business Foundation program.



Whipstone owners/farmers, Cory and Shanti Rade, discussing planting practices with an employee.



Program Evaluation and Its Importance

During educational programs, Cooperative Extension evaluates knowledge gained, behaviors modified or new practices adopted by participants. These measurements indicate short- and medium-term impacts, respectively. In some cases, follow-up surveys are conducted to see if the practices adopted have improved the participant's health or resource concern being addressed. Cooperative Extension uses these data to design and implement future programs. Below are some examples of evaluations conducted in 2020.

2020 Master Gardener Course Evaluation

Twenty-eight students completed the 2020 Yavapai County Master Gardener course. Each 3 1/2-hour session was evaluated by participants using a retrospective assessment of knowledge gained on each topic/lecture before and after the course on a seven-step scale. Increases in knowledge were scored based on the number of relative steps each respondent had increased and weighted means were calculated. Mean knowledge gained for each session was 3.2 steps and ranged from 2.8 to 4.7 for individual sessions (n=15) indicating noteworthy knowledge was gained by participants. Evaluation comments included: "Well-rounded content. Plan to use resources frequently"; "Course provided important foundation of knowledge, great job on transition to Zoom"; "So much gratitude! Jeff is an experienced and talented instructor". All comments were constructive and useful in improving future presentations and topics.

Master Gardener Help Desk Survey

In 2020, email surveys were sent to randomly selected help desk clients that consulted with one of the Yavapai County Master Gardener Help Desks during the 2020 summer growing season. Respondents (n=31) were asked about their level of satisfaction with the information they received, if the information provided was helpful, if they applied the recommended solution, and if the recommended solution was effective. 84% of the respondents were "Extremely Satisfied" and an additional 16% of the respondents were "Somewhat Satisfied". 100% of respondents said the information they received was helpful and they learned new information from the helpdesk. 93% of respondents indicated they applied the recommended solution. Similarly, 93% of the respondents who applied the recommended solution indicated it was effective and the remainder either indicated the plant in question was already dead or they needed more time to evaluate the solution's efficacy.

Commercial Horticulture and Small Acreage (CHSA)

A general survey was sent out to an email list for CHSA annual assessment of all programs to determine usefulness, support and impact to growers. A total of eight growers responded to the survey (n=8). 83.3% said the CHSA program was very useful and supportive, while 16.7% said the CHSA program was somewhat useful and supportive to them. 100% of the respondent said the CHSA program had a positive impact on their productions, and

they are implementing the knowledge gained now or plan to implement it in the future.

2020 Virtual Seed to Supper Series

SNAP-ED hosted a gardening course designed to teach science-based gardening practices to SNAP recipients. Table 1 shows knowledge gained and practices participants planned to adopt.

Table 1. Seed to Supper Post-Series Survey (following 6-session gardening series).

| Statements from Seed to Supper Evaluation | Percent of Participants that Agree or Strongly Agree (n=63) |
|--|---|
| Felt more confident about growing some of their own food. | 92.1% |
| Planned to grow some of their own food this season. | 96.8% |
| The course gave them new gardening information and knowledge that they can put to use. | 95.2% |
| Felt motivated to eat more fruits and vegetables. | 81.0% |

NACOG Head Start Lunch Aides Follow-Up Survey

In September 2020, NACOG lunch aides that attended an annual Color Me Healthy Training we surveyed. Participants that attended the previous year's SNAP-ED training completed a one-year follow-up survey about their experience conducting nutrition education activities at their Head Start site (Table 2).

Table 2. NACOG Head Start employees were surveyed regarding healthy eating and physical activity.

| Nutrition education activities Conducted October 2019 – March 2020 | Strongly Agree + Agree | |
|---|------------------------|--------------------|
| | All 4 Counties (n=10) | Yavapai only (n=4) |
| Implementing nutrition education activities has: | All 4 Counties (n=10) | Yavapai only (n=4) |
| Increased the physical activity of the children in our center. | 60% | 75% |
| Increased the children's knowledge about movement and physical activity. | 50% | 75% |
| Increased the children's knowledge about healthful eating. | 50% | 100% |
| Positively changed my attitude about the importance of teaching children about physical activity and nutrition. | 60% | 100% |

Visiting UA Faculty & Staff—2020



Cooperative Extension
Yavapai County

Janick Artiola, Water Quality Specialist, SWES
Andrew Brischke, ANR Area Assist Agent, Coconino/Mohave Cos.
Duarte Diaz, Associate Dairy Specialist, ACBS
Jeremy Elliot-Engel, Associate Director, AZ Cooperative Extension & State 4-H Program Leader
Josh Grace, ANR Area Assistant Agent, Apache/Navajo Cos.
Betsy Greene, Extension Specialist, Equine/Horse
Ashely Hall, Area Assistant Agent, Natural Resources, Gila Co.
Mitch McClaran, Range Mgmt. Professor, SNRE
Denise Moreno, Outreach Prog. Coordinator, UASRP
Monica Ramirez-Andreotta, Assistant Professor, Soil, Water, and Environmental Science
Ursula Schuch, Commercial Hort. Specialist, Plant Sciences
Russel Tronstad, Distinguished Outreach Professor and

University of Arizona Cooperative Extension Faculty and Staff

| | |
|-------------------------|---|
| Mary Barnes | Program Coordinator, ANR & Master Gardener Programs, barnesm@arizona.edu |
| Pamela Denney | Coordinator, Finance and Administration, pdenney@arizona.edu |
| Stacy DeVeau | Program Coordinator Sr., 4-H Youth Development STEM Programs, sdeveau@arizona.edu |
| Marissa Enderle | Child Care Health Consultant, Family, Consumer, and Health Sciences, menderle1@arizona.edu |
| Lisa Gerber | Coordinator, Finance and Administration, lgerber@arizona.edu |
| Isaac Mpanga | Area Associate Agent, Commercial Horticulture/Small Acreage, mpangai@arizona.edu |
| Aimee Novak | Program Coordinator, Food Safety Education, aimeenovak@arizona.edu |
| Karen Pizzuto | Manager, Finance and Administration, pizzuto@arizona.edu |
| Jeff Schalau | County Director, Agent, Agriculture & Natural Resources, jschalau@arizona.edu |
| Rebecca Serratos | Program Coordinator, Sr., SNAP-ED, rebeccaserratos@arizona.edu |
| Shirley Vasovski | Program Coordinator, 4-H Youth Development, vasovski@arizona.edu |
| Lydia Watts | Administrative Secretary, lydiawatts@arizona.edu |
| Hope Wilson | Associate Agent, Family, Consumer, and Health Sciences, hopewilson@arizona.edu |

University of Arizona Cooperative Extension Advisory Board

| | |
|-------------------------------|------------------------------------|
| Jeanne Briggs | Board Chair, Food Safety/Nutrition |
| Angela Teskey Peterson | Co-Chair, 4-H Leader/Rancher |
| Shelley Blackmore | Rancher |
| Bill Marmaduke | Master Gardener |
| Rich Peterson | Agriculture |

YAVAPAI COUNTY COOPERATIVE EXTENSION OFFICES

| | |
|--|---|
| 840 Rodeo Drive, Bldg. C Prescott, AZ 86305 Phone: (928) 445-6590 Fax: (928) 445-6593 | 2830 N Commonwealth Dr, Ste 103 Camp Verde, AZ 86322 Phone: (928) 554-8999 Fax: (928) 554-5996 |
|--|---|

Web: <https://extension.arizona.edu/yavapai>

Facebook: [@yavapaicoopext](https://www.facebook.com/yavapaicoopext)

YouTube: [UAArizona Yavapai County Cooperative Extension](https://www.youtube.com/UAArizonaYavapaiCountyCooperativeExtension)

The University of Arizona Yavapai County Cooperative Extension Faculty and Staff Members



Top row left to right: Shirley Vasovski, Lydia Watts, Mary Barnes, Karen Pizzuto

Middle row left to right: Marissa Enderle, Jeff Schalau, Hope Wilson, Stacy DeVeau

Bottom row left to right: Isaac Mpanga, Aimee Novak, Pam Denney, Lisa Gerber

Individual bottom photo: Rebecca Serratos

Thank you to our community collaborators and partners.

We appreciate your support!

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Jeffrey C. Silvertooth, Associate Dean & Director, Extension & Economic Development, Division of Agriculture, Life and Veterinary Sciences, and Cooperative Extension, The University of Arizona.

The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or genetic information in its programs and activities.