**Condition Change: UC ANR contributed to improved access to positive built and natural environments**

**Issue**

There are documented health benefits of spending time in nature, yet a 2019 landscape and urban planning study found inequities in access to urban vegetation in communities that are more ethnically, racially diverse, and have lower income levels. Furthermore, 30% of Californian youth do not have parks, sidewalks, and community centers in their neighborhood and 30% of adults do not meet physical activity guidelines. Adult and childhood obesity is a public health crisis for the state and nation, resulting in a range of negative health consequences.

**Methods**

UC ANR delivers educational programs and policy, system, and environment (PSE) interventions with the goal of improving access to positive built and natural environments.

One UC Cooperative Extension (UCCE) academic led a program in Santa Barbara County, which sought to increase individuals’ awareness and understanding of how their behaviors impact the health and wellbeing of their environments. The program engaged over 1,200 individuals that: 1) raised awareness of how individuals’ actions affect local water quality, and 2) increased participants’ understanding of their environment (Janelle Hansen and Katherine Soule).

UCCE academics provided oversight, leadership, and guidance in the statewide implementation of the CalFresh Healthy Living, University of California program (CFHL, UC). Partnerships and community-level interventions increased access to green spaces, improved outdoor physical activity, and increased appreciation of the environment (Hawau Bojuwon; Chutima Ganthavorn).

UCCE academics also provided leadership and science-based information to the UC Master Gardener Program volunteers who then extended research-based information and technical assistance to members of the public about home and community gardens (UC Master Gardener Program).

Another UCCE academic in Alameda County used her previous research in senior nutrition and lifestyle related diseases to inform her work with the UC Master Gardener and UC nutrition programs to deliver 25 on-site nutrition and gardening activities, reaching 230 senior housing elders. The goal was to address inactivity, social isolation, access, participation, and healthy nutrition and lifestyles. Low-maintenance container gardening accommodated frail and disabled seniors, providing opportunities for all residents to participate in the gardening experiences despite physical, environmental, or other barriers (Mary Blackburn and Katherine Uhde).

As a result of UCCE research and extension efforts, participants learned about the environment and increased access to positive built environments. Outcomes with specific indicators follow.

**Outcomes**

**Participants learned and changed attitudes about the environment.**

* Almost 600 San Luis Obispo County participants of workshops with environmental focuses made behavior changes that increased ecosystem benefits for local landscapes, including choosing low water use plants (100%), installing or improving drip irrigation (80%), and reducing their overall use of pesticides (72%). Workshop participants also reported increases in edible gardening and time spent gardening and outdoors in general. As educators and practitioners gain new knowledge and skills, environmental improvements are anticipated, which will create more opportunities to spend time outdoors, reduce community exposure to pesticides, and increase access to clean drinking water. (Maria Murrietta and Katherine Soule)
* As a result of senior participation and effort in Alameda County on-site garden activities, almost 120 seniors reported not having a plot in the on-site community gardens prior nor ever planted a container herb garden prior to this intervention. Additionally, thirty percent of participants trained by UC Master Gardeners went on to volunteer as peer-educators and gardening ambassadors. (Mary Blackburn and Katherine Uhde)

**Change in condition: Improved access to positive built and natural environments.**

* In 2019, 17 CFHL, UC program sites across the state newly adopted or expanded playground stencils. Combined with teacher training and delivery of evidence-based physical activity lessons, the stencils provided outdoor, engaging, and structured physical activity. Additionally, as a result of CFHL, UC interventions, 143 sites statewide established new, reinvigorated, or expanded edible gardens most commonly at schools and early care and education settings. (CFHL, UC)
	+ As a result of CFHL, UC collaborations with Kern County Public Health Services Department, Kern County Library and McKinley Elementary School, a new community garden was built. After which 78% of 18 community members significantly increased their knowledge of gardening methods and resources available to start and sustain a garden in Kern County. Furthermore, upon sharing the results of the site visit with the Kern County Nutrition Action Plan (CNAP) coalition meeting, Parks and Recreation inquired and indicated interest for ideas to establish additional gardens in Kern County. (Hawau Bojuwon)
	+ CFHL, UC in Riverside County partnered with the Master Gardener Program to help two schools adopt new gardens through policy, systems, and environment (PSE) interventions. Additionally, they continued to maintain school gardens at six other locations, which enabled sites to adopt garden-based learning programs as well as increase opportunities for healthy food access. (Chutima Ganthavorn)
* Participants of UC Master Gardener volunteer-led educational programs reported in a statewide survey that they started or improved practices on over 1,200,000 square feet of home gardens in California, as reported by 507 participants and over 130,000 square feet of school and community gardens, as reported by 74 participants. Gardening interventions have the potential benefit to the broader community. A 2016 nationwide study found that living near greenery may help you live longer due to less air pollution, more physical activity, more social engagement, and most significantly better mental health as measured by a lower prevalence of depression. (UC Master Gardener)
	+ As a result of senior participation and effort in Alameda County on-site garden activities, the number of garden plots has tripled. (Mary Blackburn and Katherine Uhde)

These measured outcomes demonstrated individual learning gains related to the environment and PSE changes that created more opportunities to spend time in gardens and outdoors. In this way, UC ANR improved access to green spaces and the outdoors for people and communities where they live, learn, work, and play. According to the Center for Disease Control and Prevention, you can burn up to 300 calories during just one hour of light gardening and yard work. In addition, research with students has demonstrated that just 30 minutes spent in nature after completing a stressful task improves their mood. The students who were studied exhibited lower levels of cortisol, the stress hormone. Collectively these efforts contribute to the public value of promoting healthy people and communities.