**Climate Resilience in Urban Landscapes Specialist**

**Position:** This Cooperative Extension (CE) Specialist will conduct research and outreach on the transformation of traditional urban landscapes to adjust to climate change into resilient, biologically rich, and functional spaces. The Specialist will hold a Ph.D. in landscape architecture or horticulture with demonstrated experience in applied research. The Specialist is expected to address “landscape performance" and includes novel monitoring techniques, post-occupancy evaluation, interpretation of these landscape values, and the facilitation of social understanding and acceptance through extension and outreach. Study topics include the impacts of transformed landscapes, and mitigation of those effects, on plant selection; local climate; species diversity and habitat for non-plant species; resource conservation; environmental functions; wildland-urban landscape interfaces; and social functions.

**Justification:** In 2015, UC Agricultural and Natural Resources (UC ANR) established the Climate Change Program Team to investigate how climate change is integrated into CE in California. In 2017, the team surveyed over 1,000 UC ANR faculty, specialists, advisors, and staff and revealed that although there was overwhelming agreement on the importance of addressing climate change, fewer than half of the respondents incorporate it in their extension programs. Perceived barriers included lack of access to climate information relevant to extension programs and clientele, limited familiarity with climate science fundamentals, and fear of alienating clientele by talking about a contentious topic. These results were published in **California Agriculture**. Despite these gaps, there is no one in UC ANR assigned to study the topic of climate change effects on urban landscapes.

**Extension:** The extension activities the position will be expected to fulfill include extending information on the design, construction, and maintenance of resilient landscapes at key public, academic, and stakeholder venues; conducting applied research on landscape performance through monitoring and post-occupancy evaluation; utilizing whole community approaches to identify needs and resources; developing outreach programs; and interacting with stakeholder networks. Key clientele groups include County CE Advisors; state, regional and local agencies; green industries (nurseries and landscape maintenance professionals, etc.); social justice organizations that work with underserved population; commercial, industrial, and institutional property owners; landscape architects and designers; urban planners; academic institutions; arboreta and botanic gardens; and community gardens. Interactions with these stakeholders will develop partnerships and obtain grants to conduct successful research projects and effective outreach and extension programs.

This Specialist will develop cutting-edge sustainable landscape practices to comply with existing regulations, such as the Water Efficient Landscape Ordinance and work with UC ANR’s vast network of volunteers in Statewide programs, including the UC Master Gardener Program, California Naturalists, and the Informatics and GIS (IGIS) Program, to extend research-based information to exponentially expand the impact of creative research. This position expands opportunities for UC ANR to direct resources to urban areas and disadvantaged communities, leveraging the reinvestment of climate change funding already designated for environmental justice projects through legislation such as California Senate Bill SB-535.

**Research:** The key research areas for this position are: design innovation in urban landscapes using techniques such as post-occupancy evaluation and the watershed approach, experimentation with novel materials, methods and techniques that promote landscape resilience, climate change impacts as it relates to water and energy management, landscape performance metrics and monitoring for water use, energy use, biodiversity and environmental functionality, interpretation and education, and public policy in the areas of plant conservation, resource conservation and management, and climate change.

The research conducted by this Specialist can lead to urban landscapes that are more resilient against climate change instigated threats including wild fires, drought and flooding by integrating planting design with green infrastructure and sustainable technology to address the needs of UC ANR academics looking for leadership in the area of climate change.

**ANR Network**: The CE Specialist is expected to interact and collaborate with county CE Advisors, the CE Specialist in Climate Adaptation in Agriculture at UC Merced, CE Specialists at UC Davis in the departments of Human Ecology and Plant Sciences, and AES scientists. The Specialist may work with other departments including Entomology, Environmental Science and Policy, and Veterinary Medicine: researchers on other campuses such as the Climate Change in Agriculture Specialist at UC Merced; and outreach and extension programs such as the Statewide Master Gardener and California Naturalist Programs; the Climate Change and Environmental Horticulture Program Teams; and the California Communities, Science Technology and Environmental Literacy, and Water Quality Workgroups.

**Network External to ANR**: The CE Specialist is expected to collaborate with researchers at the Center for Regional Change at UC Davis, the UC Global Health Institute, the California Center for Urban Horticulture, and the Center for Watershed Sciences. Non-UC collaborators include the USDA Natural Resource Conservation Services and Resource Conservation Districts across the state, California resource agencies (e.g., Departments of Conservation and Water Resources), local municipalities, American Society of Landscape Architects, Landscape Architecture Foundation, Trust for Public Land, US Green Building Council, Community Built Association, Xerces Society, Audubon Society, California Native Plant Society, Nature Conservancy, and the California Native Grasslands Association.

**Support:** The CE Specialist would receive support for supplies, transportation, and office/research space from the Landscape Architecture and Environmental Design Program in the Department of Human Ecology in Hunt Hall at UC Davis.

**Other support:** External funding opportunities exist through federal programs, such as the US Green Building Council, NRCS, California state resource agencies, and NGOs such as the Landscape Architecture Foundation Sustainable SITES Initiative. Additional funding sources include the Stanley Smith Horticultural Trust, Trust for Public Land, Wildlife Conservation Board, and California resource agencies. Like many municipalities converting traditional public turf landscapes into more sustainable landscapes, the UC Davis campus alone will be investing approximately $2 million transforming landscapes and this position may leverage these projects as teaching, research, and outreach sites.

**Location:** The Specialist will be housed in the UC Davis Department of Human Ecology at the Landscape Architecture and Environmental Design unit. Collaborations may be formed with the Department of Plant Sciences, the Community Development Program, John Muir Institute of the Environment, Center for Regional Change, California Center for Urban Horticulture, and the Arboretum and Public Garden. This Specialist will benefit from being based at UC Davis, a world leader in the environmental and agricultural sciences with its deep bench of environmental, agricultural, and landscape researchers to draw upon.

**Developed and proposed by:** This proposal was developed by the faculty of the Landscape Architecture and Environmental Design Program in the Department of Human Ecology with input from CE Specialists in Environmental Horticulture and in Veterinary Medicine, the Statewide Director for the ANR Master Gardener Program, the Executive Director of the California Center for Urban Horticulture and is supported by the Director of the California Naturalist Program.