**CED16: Agriculture Technology Area Advisor**

**DESCRIPTION**

This position will develop a research and extension program that integrates several disciplines to focus on expanding agriculture technologies in urban and peri-urban communities by focusing on controlled environment agriculture (CEA) production. The position will also include a community and economic development component, working closely with regional economic development, academic, industry, and governmental organizations to promote regional prosperity through collaborative efforts to expand the applications of controlled environment agriculture across the region, (1) The general disciplinary focus of this position is agriculture engineering and plant sciences (i.e. crop ecology) (2) the preferred educational and professional background requirements include a minimum of a Master’s degree in plant science, agricultural engineering, or related fields and (3) the position will report to the South Coast REC Director and work with many supporting units including ANR statewide programs such as the Sustainable Agriculture Research and Education Program, UC IPM, The VINE, the Environmental Horticulture, Vegetable Crops, Diversified Farming and Food Systems, California Communities Program Teams as well as the  AI Institute for Food Systems and BioAg Engineering at UC Davis. Key external partners will include the Orange County Economic Development Corporation, California Polytechnic Institute, Pomona, UC Irvine, UC Riverside, and other regional and national organizations dedicated to controlled environment agriculture.

**JUSTIFICATION**

While ANR has long focused in technical fields such as agricultural and plant sciences, and environment-related issues such as nutrient and water use efficiency, as well as work on community development and rural assistance, these areas have tended to work separately. Given the increasing pressure on the agriculture industry due to labor shortages, increased regulation, drought and limited water supplies, access to markets, and more, it is an important time to integrate ANR's research and extension efforts with community and economic development activities to support the expansion of new production methods in support of a more sustainable and resilient food supply chain. Controlled environment agriculture production systems in urban and peri-urban environments are a growing industry in California and nationally. Support for this growing farming sector will better ensure long-term regional food systems and local food security in Southern California.

This advisor would focus on providing technical assistance on all aspects of controlled environment agriculture systems, integrating crops and CEA production systems, and collaborating with other regional companies and entities developing, evaluating, and integrating CEA systems. Collaboration with growers, CEA supply chain companies, the region’s universities, and urban planners will be critical. The focus would include both enhancing the profitability of the CEA industry, through research and extension activities aimed at lowering the cost of the CEA footprint and expanding the markets for CEA-grown products. The advisor should work with food system groups (e.g. food policy councils) and governmental organizations to position CEA as an important part of the local food system.

This position will contribute to UC ANR's goals of 1) promoting economic prosperity in California, particularly through enhanced community economic development, 2) protecting California’s natural resources through promoting the expanded use of controlled environment agriculture, and 3) building climate-resilient communities and ecosystems.

**EXTENSION**

The position will be expected to work in partnership with greenhouse and nursery growers as well as field agriculture producers of vegetables, fruit, flowers and medical plants. One focus will be to assist both growers and related companies with development, testing and implementation of advanced plant production technologies. The position serves historically underserved communities of farmers, community development organizations, and other entities focused on CEA, particularly where such industries are emerging to play a major role in local food production. This position should take an active role in public outreach related to CEA topics, particularly in areas where there is a current strong need for action (reduction of nitrogen run-off from production facilities; production of food without the use of pesticides, etc). The position is expected to interface directly with firms starting to develop operations in California to assist with overcoming local and regional hurdles. The position will also develop strong collaborations with key community groups, local universities, and other non-governmental organizations. The advisor will collaborate with UCCE Advisors and Specialists, as well as other UC and CSU system academics, and USDA-ARS researchers.

**RESEARCH**

The candidate would address key questions in areas such as:

* Which existing technologies, crops, and business models, both in the US and abroad will create profitable new opportunities for CEA firms? The advisor will conduct applied research to demonstrate such technologies while conducting projects generating unbiased data to show how such technologies promote sustainable solutions in the region.
* How can CEA systems be synergistic with conventional farming methods? The most likely new CEA operations will result from farmers adopting new technologies. This advisor extends such information to farmers emphasizing the benefits of the technology. This advisor will work with other CEA researchers in the UC and in other nearby land grant universities to collect and generate unbiased data for the industry.
* What are the barriers to CEA adoption and expansion in Southern California and how can that be addressed? Such research will focus in part on economic and social facets and specially to identify hurdles for underrepresented clients.
* Some new frontiers in agriculture are so different that existing policy requires change. This requires that UC engage directly to create unbiased information which policymakers can trust. Policy changes require independent scholars supporting both community leaders and farmers with relevant research results which support the public good.

The candidate will need the skills and competencies to cross disparate research and extension fields, such as plant and agricultural sciences, agricultural engineering, community and economic development, extension education, and technical assistance provision, to address critical issues that will ensure the long-term resiliency of Southern California food systems.

**ANR NETWORK**

ANR Informatics and GIS statewide program, California Institute for Water Resources, UC Integrated Pest Management, Sustainable Agriculture Research and Education Program, the UC ANR Research and Extension Center System, and Cooperative Extension in Orange, Riverside, Los Angeles, San Diego, San Bernardino, and Ventura Counties. Collaborative program support is provided through Strategic Initiatives, Program Teams, and partnerships with UC academics in departments working in areas relevant to agriculture technology and community economic development.

**EXTERNAL NETWORK**

UCI The Cove, REVHub, UC Merced, UC Davis, UC Riverside, California State University Pomona, Small Business Development Center (SBDC), UC CITRIS, Orange County Economic Development Corporation, Small Business Development Center, GoBIZ, CDFA, USDA ARS, and the iHub Network.

**SUPPORT**

The position will be located at SCREC and uses all its components to deliver a state-of-the-art program. The advisor will be provided with an office, telephone, high speed wireless internet access, storage space, access to SCREC infrastructure, office supplies, clerical and administrative support. Facilities (eg greenhouse, nursery, etc) at SCREC uniquely provide a framework for showcasing new technologies for all facets of plant production agriculture supporting for conducting CEA research, extension and demonstration. SCREC also has a lecture hall which can be used for regional extension programs.

**OTHER SUPPORT**

It is expected that research support will come from a variety of internal and external sources, such as USDA- NIFA, NSF, DOE, ANR competitive grants, industry partnerships, and local community groups.

**HEADQUARTERS AND COVERAGE AREA**

South Coast Research & Extension Center (SCREC), covering the Southern California region including Orange, Los Angeles, Riverside, San Diego, and San Bernardino, and Ventura.

**DEVELOPED AND PROPOSED BY**

Gabe Youtsey (UCANR Chief Innovation Officer), Glenda Humiston (UCANR Vice President), Darren Haver (UCANR Director South Coast REC), Heiner Lieth (UC Davis Professor, CE Specialist, EH program team leader, F&N Workgroup leader)