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Authors
Meyer, Ryan
Drill, Sabrina

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Report: Assessing community and citizen science at UC ANR

The authors uncovered a rich diversity of projects that engage Californians in UC ANR research, and a variety of challenges and opportunities for expanding this work.

by Ryan Meyer and Sabrina Drill

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A recent report, prepared for UC Agriculture and Natural Resources (UC ANR) by the UC Davis Center for Community and Citizen Science, explores the many ways that the Cooperative Extension system in California is engaging the public in research, and the opportunities this represents. Community and citizen science (CCS), which refers to science conducted, in whole or in part, by amateur or nonprofessional scientists, is a diverse and growing field of research and practice. CCS projects can take many forms, from app-based crowd-sourcing projects to community-led monitoring, or co-created projects with private landowners (see articles throughout this special issue).

Why examine CCS at UC ANR?

The scale of statewide Cooperative Extension systems, combined with their long history of collaborating with clientele communities, presents a unique opportunity. What can citizen science practitioners and Cooperative Extension programs learn from one another? What unique citizen science opportunities exist in the Cooperative Extension context? How are our notions of citizen and community science challenged by the diverse examples playing out in Cooperative Extension? Over more than a century, the Cooperative Extension programs of land-grant universities have been connecting farmers and a wide variety of other clientele communities with university-based research. Today, Cooperative Extension's public engagement efforts take a variety of forms, many of which fall within contemporary definitions of CCS.

We set out to examine the particular strengths of CCS at UC ANR, while also identifying gaps and challenges. We conducted interviews and a short survey, reviewed program documents, and engaged in a variety of informal interactions with UC ANR personnel, including a symposium at UC ANR's statewide meeting.

A rich diversity of projects and potential

Our results show that there are many different ways in which UC ANR can foster, benefit from and promote innovations in CCS. We identified a wide range of projects underway across the state. Some are community-driven, while others are led by researchers. Some are open to the public, while others target specific groups of collaborators such as high school students or cattle ranchers. In some cases, CCS projects at UC ANR directly serve the interests of a UC researcher, while in other cases the organization is building capacity that others outside the system can leverage for CCS activities. The diversity of motivations, approaches and outcomes of CCS at UC ANR mirrors the evolution of the CCS field, globally. With that diversity and rapid-paced development comes a variety of tensions related to definitions, values, perceived credibility and professional recognition.

We also found some unique advantages for CCS at UC ANR. The organization's ability to form and maintain statewide networks of volunteers (e.g., through the California 4-H Youth Development, UC Master Gardener and UC California Naturalist programs) presents a particularly important and valuable opportunity for UC ANR, and indeed for the state — one that remains relatively underutilized beyond the county scale. We also found that CCS at UC ANR can create feedback loops with other kinds of engagement within research and outreach work, such as education and outreach or traditional clientele input. Finally, we identified a need for more data about participation in CCS projects at UC ANR, which could improve understanding of how these projects address access and equity in UC ANR programs, and how they are helping to expand and deepen engagement throughout California.

A vision for CCS at UC ANR

We believe the results of this work are cause for celebration of the thriving ecosystem of CCS approaches and projects already underway at UC ANR, but more can be done. Recommendations in our report aim to help to build a sense of cohesion around CCS as a concept, without limiting diversity and creativity, through, for example, opportunities for training and exchange, and capacity building for successful projects.

Our vision for CCS at UC ANR looks towards a future where:

1. Opportunities to participate in UC ANR research are more pervasively available, equitable and impactful throughout California.
2. UC researchers who want to engage communities in their work can gain skills and access support structures for doing this effectively.
3. CCS networks at UC ANR are providing a unique statewide resource to researchers, state and federal agencies, and others striving to understand and address large-scale environmental challenges.
4. CCS is expanding awareness of, and appreciation for, the role of UC ANR in California's environment, economy and communities.

We are excited to be able to offer UC ANR leadership a variety of recommended actions to achieve that vision. The full report can be found at https://education.ucdavis.edu/ccs-cooperative-extension. CA