**Agrivoltaics: From Farm Fields to Rooftops**

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***Extension Mentors***: Ron Meyer, Agronomist, CSU Extension, RF.Meyer@colostate.edu 719-346-5571 and Todd Ballard, Agronomist, CSU Extension, Todd.Ballard@colostate.edu 970-474-3479

***Region***: Front Range and Northeast. Field research at the CSU Foothills Campus west of Fort Collins.

***Goals, Scope, and Objectives***: Co-locating the cultivation of food crops and solar panels allows farmers to garner benefits from two synergistic systems. Can we produce food and electricity on the same acre? Taking it further for urban areas by putting it on a rooftop is called rooftop agrivoltaics. See a TEDx talk on the concept by the faculty mentor: <https://youtu.be/pobj34HuHO8>

Agrivoltaic growing systems are still in their infancy and require further investigation to evaluate the feasibility of growers producing both crops and energy in the same space. One of the primary benefits of these systems is that solar panels shade (or partially shade) crops so that there is reduced temperature variability in the production system as compared to typical field conditions. Solar panel performance also improves because of the evaporative cooling that the plants provide.

Therefore, the intern on this project would assist a graduate student in screening horticultural crops for use in rooftop agrivoltaic systems. Additionally, the Extension aspect will include a project that describes the subject, identifies applications, addresses costs and benefits, and reports current data by distributing the new information to stakeholders.

***Project Identified***: In the summer of 2021, we installed a rooftop agrivoltaics plot at the CSU Foothills campus. This summer we will expand that research. This intern will work with graduate students in the field as well as work on an Extension project that describes the subject, identifies applications, addresses costs and benefits, and reports current data.

***Stakeholder Groups***: Extension, agriculture, horticulture, green roof, and solar industries. This intern will also interact with a faculty member in the Department of Mechanical Engineering and the Department of Physics since we are working with solar panels. Other CSU Departments that may interact with this project include the Agricultural Biology and Soil and Crop Sciences Departments.

***Learning Outcomes/Professional Development***: The intern will gain hands-on experience in the agricultural and horticultural aspects of agrivoltaics. Additionally, the intern will interact with professionals and gain experience in the areas of Extension, agriculture, horticulture, green roofs, and solar industries. Therefore, the intern will not only learn about the scientific aspects of these areas but also network with diverse professionals.

The intern will travel to the Extension mentor locations. Extension activities will include learning from agricultural research and locally held field days. The intern will also learn about Extension information dissemination, which includes news releases, social media posts, field days, websites, newsletters, and crop clinics.  Extension activities the intern will be involved in include on-farm agronomic testing sites located in northeast Colorado.

***Align with Extension Goals***: Extension shares research-based science with the public. This experience is applied research on a cutting-edge topic. The effort of the intern will be highly impactful to this project.

***Travel Funds***: Funds will be provided by the faculty mentor for travel related to Extension activities. No funds are available for housing.