Research Development Fund – Fall 2023 Application

Application Title: ***An Agrivoltaics Research Station at Texas A&M University***

Lead contact for RDF Application:

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Key Participating Units: Departments of Soil and Crop Sciences (SCSC), Horticultural Sciences (HORT), Atmospheric Sciences (ATMO), Electrical and Computer Engineering (ECEN); College of Arts and Sciences, College of Agriculture, College of Engineering, TAMU AgriLife Research

RDF Amount Requested ($): $2 million

1. Executive Summary

Texas A&M should be a leader in Agrivoltaics research given our history as the Agricultural and Mechanical College of Texas. Agrivoltaics is the co-location of solar photovoltaic energy generation with agricultural production. Existing research, mostly carried out at small facilities at higher latitudes, has shown that such co-production can create a win-win-win situation: farmers improve their economic outlook via sales of electricity generation on their land while maintaining agricultural production on fertile soils, while improving resilience to extreme weather conditions such as heat stress and drought by reducing evaporative demand across parts of fields while participating in the decarbonization of the economy. A solar array installed at the Aggie Farm on the Brazos River bottomlands west of College Station will provide a long-term research facility for agricultural, energy and environmental scientists during a critical time for humanity. A&M's prominent agricultural, biological and physical science faculty in the Colleges of *Agriculture* and *Arts and Sciences* will improve their competitiveness in increasingly frequent calls for research and engineering efforts addressing climate change mitigation and adaptation in the country's energy and agricultural sectors. Outcomes will include new knowledge providing, place-based, optimum agrivoltaic setups and operations in the US south to maximize select crop and energy yields, minimize environmental impacts, and/or maximize environmental and long-term economic benefits. At the same time, the project offers cost avoidance benefits.