

An experiential learning-based public plant breeding pipeline for organic cultivar development: Student Collaborative Organic Plant Breeding Education (SCOPE) at UC Davis

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Student Collaborative Organic Plant Breeding Education (SCOPE) is a student-led collaborative of student and faculty plant breeders working with local organic growers on improving crop varieties for organic farming systems in Northern California with the possibility of future expansion to other regions. The organic plant-breeding project was developed in direct response to California organic growers, who have reported that the scarcity of seeds for cultivars that meet the needs of organic farming can seriously impact a farm's bottom line. Using traditional, field-based plant breeding methods, new varieties of heirloom-like tomatoes, jalapeno poppers, bell peppers, pest resistant common bean and lima bean are being developed on certified organic land at The Student Farm at UC Davis. The breeding objectives of these projects were selected based on input from local organic farmers, the Organic Seed Alliance, and faculty participants. In addition to the breeding projects, the students participate in seminars focused around how to conduct outreach activities, organic farming methods, and project management as well as participate in Field Days to showcase their work to a broader audience.