

# CSU Sacramento students teach aquaponics to Luther Burbank students

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*Environmental studies students at [Sacramento State](#) are showing high school students a sustainable way to grow plants in an urban setting.*

Sacramento City Unified School District students are learning how to utilize aquaponics to produce plants, fruit and vegetables in an urban garden at Luther Burbank High School as a component of the Summer of Service program.

Aquaponics is a “sustainable urban agriculture system” that features a water circulation aspect that wastes 90 percent less water than traditional farming methods, said Cheyene Keniston, a senior environmental studies student at California State University, Sacramento.

The urban farmers start with a tank filled with fish that are fed worms from the high school’s compost, which repurposes uneaten cafeteria food, Keniston said. The fish then excrete ammonia, which is pumped from the tank to the grow bed, and bacteria naturally cultivates in the bed.

The project is led by Keniston and two other Sacramento State environmental studies students, Ryan Nowshiravan and Mary Xiong.

The three seniors received class credit to build the aquaponics system and for their time spent interning this summer, Keniston said. They are volunteering to teach high school students about the urban agriculture program.

Luther Burbank students involved in the gardening program have been more engaged, said Aaron McClatchy, a Burbank teacher and after-school gardening program coordinator.

“It’s a no-brainer for getting students to engage in science, sustainability, healthy foods and all these wonderful things that you can teach through the garden,” McClatchy said.

One of McClatchy’s students is 16-year-old Matthew Cundiff, who has autism. Matthew’s mother, Betty Cundiff, said that he has benefited from the program by having the opportunity to socialize with other students and learn how to be in a working environment.

“I think it’s an opportunity for Matt and his peers to be in a new, big different experience,” Cundiff said.

Her son is especially interested in the fish’s role in the aquaponics system, she said.

“They introduced it at the school and then he asked for an aquarium for his birthday,” Cundiff said.

Burbank's urban farming program will host an aquaponics plant sale on Saturday and Sunday to raise funds for the program, McClatchy said. The program is not funded by any specific grants. It is supported by using abandoned materials and small donations.

"We're going to continue to engage and find funding ... it's all difficult and wonderfully rewarding," McClatchy said.



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Cheyene Keniston and Ryan Nowshiravan, Sacramento State seniors majoring in environmental studies, are leading a program at Luther Burbank High School that educates students on aquaponics systems and urban agriculture. Aquaponics is a combination of aquaculture, the propagation of aquatic species in a large tank or pond, and hydroponics, the propagation of plants in a non-soil-based system using liquid nutrients and chemicals that are fed to the plants through water.

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<http://www.sacbee.com/2014/09/02/6670846/csu-sacramento-students-teach.html>