

# CU students to help NASA develop astronaut food

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(Phys.org) -- University of Colorado Boulder students and faculty have been selected to develop a remotely operable, robotic garden to support future astronauts in deep space.

The project is one of five university proposals selected to participate in the 2013 Exploration Habitat (X-Hab) Academic Innovation Challenge led by NASA and the National Space Grant Foundation.

The yearlong project's ultimate goal is to support long-duration [human](#)

[space exploration](#), such as a mission to Mars, according to Christine Fanchiang, a graduate student in [aerospace engineering](#) sciences who is one of three core students managing early project development.

The project will be led by CU-Boulder Professor Joe Tanner, a former astronaut now teaching in the aerospace engineering sciences department, Nikolaus Correll, a computer science professor who previously spent two years working on robotic gardening systems at MIT, and Dave Klaus, an aerospace engineering professor with expertise in space habitat design and space life sciences.

Students from two graduate-level aerospace engineering courses at CU-Boulder will focus on the project next year in order to deliver an operating system to NASA in the summer of 2013.

The completed project will be a bioregenerative [food system](#) that will grow, harvest and compost a variety of plants. Bioregenerative systems support life by simultaneously revitalizing the atmosphere, purifying water and producing food for consumption.

The team already has a prototype growing environment for autonomous plant production that is based on work done in CU-Boulder's computer science department over the last two years.

“Psychology is a major driver of how well people can survive in isolated, confined environments,” Fanchiang said. “Picking the tasks to automate and determining if there is a way to mix automation with some manual tasks, like picking the fruit, are part of the project.”

Fanchiang is excited about the multidisciplinary nature of the gardening project, and of the bioastronautics field in general. “It’s fun because you get to see something outside of your own expertise,” she said.

In addition to advancing the goal of sustaining a mission to Mars, Fanchiang noted that the food production [project](#) also could be useful for people in everyday life.

“The X-Hab Academic Innovation Challenge is an exciting opportunity to engage university teams in the design process for NASA’s next-generation space systems,” said Jason Crusan, NASA’s AES Program manager at NASA Headquarters in Washington, D.C. “The agency benefits from the fresh and innovative perspective of these university teams, and they learn about deep space human exploration and the systems engineering approach from an experienced NASA team.”

**More information:** [www.spacegrant.org/xhab](http://www.spacegrant.org/xhab)

Provided by University of Colorado at Boulder

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