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Innovative ways to take out the trash

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Taking out the trash has never been this cool, or this important.

This weekend, students from MSU Denver's Industrial Design and Engineering departments will test in-stream trash removal machines in Cherry Creek in downtown Denver as part of the inaugural Clean River Design Challenge.

Five student teams will compete against one another for bragging rights and a \$3,000 cash prize presented to their department in order to further pursue the winning concept. And that's on top of creating a machine that could make a major impact on the environment and water quality in Colorado.



An early design sketch of the Nautilus, one of five in-stream trash removal machines created by MSU Denver students as part of the inaugural Clean River Design Challenge. IMAGE: Courtesy of The Greenway Foundation.

Industrial design students Mara Maxwell and TJ DiTallo teamed up to create the Nautilus, a passive device that uses the natural flow of the river to collect trash, while doubling as a public art installation that brings awareness to the issue.

"Our project balances technical elements and aesthetics," said Maxwell. "Of course it has to work, as the primary function is to help remove trash from the waterways, but most of Colorado's rivers are used extensively for recreation, so it can't be an eyesore either."

The design challenge was made possible by a grant from [Rose Community Foundation's Innovate for Good](#) initiative, and will be hosted by The Greenway Foundation and co-sponsored by The Water Connection and MSU

Denver's One World One Water Center for Urban Water Education and Stewardship.

"The idea is to raise awareness about trash pollution in the South Platte River and its tributaries," said Autumn Bjugstad, engagement director for The Greenway Foundation. "But we're also hoping to find real-world solutions for removing trash from our urban waterways."

Ten student teams initially submitted designs more than eight months ago. Five of those 10 were selected to participate in the final competition. Teams were given \$1,000 each to create a working model.

Their prototypes will be put to the test this Saturday and evaluated by judges representing water interests from across the state, including Denver Water, the Department of Environmental Health for the City and County of Denver, and Metro Wastewater Reclamation District, among others.

Beyond the element of competition, the test serves as a major learning experience for students.

"We are excited to test our prototype and see how well our design actually works in the real setting," said DiTallo. "It is always incredibly useful and exciting to test a prototype. You get to see how well your design performs and you instantly get to see how you can make improvements."

The winning team will also present its concept to the boards of The Greenway Foundation, The Water Connection, and Urban Drainage and Flood Control, offering students an invaluable professional networking opportunity.

The Clean River Design Challenge will be held in Confluence Park and in conjunction with the CH2M Spring RiverSweep presented by The Nature Conservancy, MillerCoors and Noble Energy on Comcast Cares Day.

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