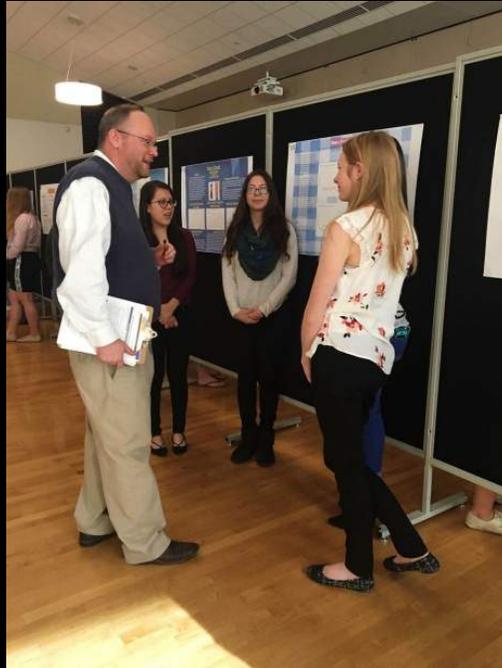


# Greeley-Evans School District 6 high schoolers worked with engineering students from CU to test the air quality of their schools

**Tommy Wood**  
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## **The Tribune/Andrew Sorenson**

University of Colorado researcher Daniel Knight talks to Union Colony Preparatory School high school students Missy Trigos, Jenna Mora and Haley Wood at an air quality symposium Thursday that featured their research. Nearly 150 students from Greeley have worked with CU faculty, staff and graduate students on air quality research through a partnership between CU and Union Colony, Greeley Central and Greeley West.

There's one story about the Air Quality Inquiry Science Symposium that Eileen Duncan, the AP environmental sciences teacher at Union Colony Preparatory School, will never forget: two years ago, one of Duncan's students wanted to be a theater major in college before he entered the program that connects Greeley-Evans School District 6 high-schoolers with mechanical engineering students at the University of Colorado to test the air quality of their high schools.

When he left the symposium, he'd decided to study environmental sciences.

That's the kind of impact Duncan hopes the symposium — which took place Thursday in the University Center at the University of Northern Colorado — has on her students every year. Greeley West and Greeley Central high schools participated in addition to Union Colony.

The collaboration between CU and District 6 started three years ago, after Duncan attended a professional-development conference about testing air quality near oil and gas wells. That gave her the idea to bring the project to her classroom, giving her students hands-on experience and letting them design their own air-quality experiments. But the equipment for doing so typically costs about \$10,000 a pop.

That's where CU came in. Students in the university's mechanical engineering department found a way to build air-quality testing pods, which Duncan described as "little yellow suitcase-looking things with motherboards," for \$1,000 each. The CU students show the District 6 students how to work the technology, then the high-schoolers design their own experiments in groups.

One group tested classroom carbon-dioxide levels, to see if cooping 30 kids up in a room for an extended period of time while they're all exhaling CO<sub>2</sub> has a detrimental effect on their productivity. Another tested perfumes students commonly wear because, Duncan said, perfumes give off volatile organic compounds that can be harmful to breathe. Others tested ozone levels in Greeley compared to Estes Park and looked at outdoor air quality in the middle of Greeley compared to a farm.

One student tested the fumes from different art markers after noticing her cartoonist dad kept getting headaches during work. There were projects about the ozone emitted by cow and horse manure, emissions from plastic burning and CO<sub>2</sub> levels at West compared to Central.

Liz Mock-Murphy, the environmental sciences teacher at Central, spoke with pride about one project in particular: a special-ed student who has trouble reading and speaking did a project about car emissions and stood up and articulated his results himself.

"For me, that was so cool," Mock-Murphy said. "For him, that was a huge turning point because no one's asked him to do that before."

Students presented their projects to CU students Thursday, along with a research paper, and the CU students will grade the high-schoolers' experiments. The winning group will be invited to CU's mechanical engineering senior project presentation in May.

"It speaks to the importance of letting kids do their own research," Mock-Murphy said. "It's those times they really grow the most."

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