

Using scientific methods to evaluate trade-offs of hydraulic fracturing

April 21 2015, by Miles O'brien

In Colorado, drilling for oil and natural gas using hydraulic fracturing, sometimes referred to as fracking, is big business. But, questions about its impact on the air and water are far from settled.

With support from the National Science Foundation (NSF), University of Colorado environmental engineer Joseph Ryan heads a team gathering data on the pros and cons of oil and natural gas development, including the use of hydraulic fracturing. The broad research goals of the team include exploring potential impacts on water and air quality, human health and energy sustainability. For example, the researchers are investigating how long [hydraulic fracturing](#) chemicals persist should the chemicals make their way into the groundwater. And, team members are working with local residents to gather air quality data on carbon dioxide, carbon monoxide, [volatile organic compounds](#), ozone and nitrogen dioxide.

A mobile laboratory is used to record levels of methane gas, a greenhouse gas that can come from a variety of sources including oil and [natural gas extraction](#). The team is also looking at the benefits of oil and [natural gas](#) development so regulators, policymakers and the general public can see the complete picture before forming opinions or making decisions. The outreach and education components of the research will focus on citizen science, public involvement, and awareness of the science and policy issues.

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