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Professors brief Capitol Hill on impacts of 'fracking'

By [Kristina Bartlett Brody](#)

Just days after a Congressional House committee announced an investigation into hydraulic fracturing, Cornell faculty and extension educators briefed Congressional staff on the potential environmental, community and economic effects of the “fracking” technology used to extract natural gas contained in rocks deep within the earth.



Howe



Riha

Recent advances in fracturing technology have encouraged oil and gas companies to begin drilling in previously unexploited reserves, particularly in the Marcellus Shale beneath parts of New York, Pennsylvania, West Virginia and Ohio. However, environmental groups and some members of Congress are concerned that a lack of federal oversight could lead to new environmental and public health problems.

According to recent reports, the Marcellus Shale could yield 516 trillion cubic feet of natural gas and could become the biggest source of shale gas in the United States, said Susan Riha, Cornell professor of earth and atmospheric sciences and director of the New York State Water Resources Institute. Riha and Rod Howe, assistant director for community and economic vitality for Cornell Cooperative Extension (CCE), spoke to a packed briefing room of Congressional staff Feb. 22.

The gas is unconventional because it is not naturally pooled in a reservoir, but is dispersed throughout the shale in tiny spaces, Riha said. To collect shale gas, companies drill down and then a horizontal drill hole is extended into the shale. Large quantities of water, mixed with sand, are used to fracture the shale and release the gas, which is then piped up to the surface. Chemicals are also added to increase the gas flow.

Companies have not been required to publicize the specific chemicals used since 2005, when hydraulic fracturing was exempted from the federal regulations spelled out in the Safe Drinking Water Act. But Congress is currently considering a bill to bring hydraulic fracturing back under federal regulation. Also, on Feb. 18 members of the House Committee on Energy and Commerce sent a letter to oil and gas companies seeking information about fracking practices.

Riha said further studies into fracking are necessary to ascertain the effect on water resources and that there is an important role for federal government.

“It’s going to be very difficult for the states to each individually evaluate new chemicals and technologies as they come online,” said Riha.

She added that one drill site can use 4 million to 7 million gallons of water per week for fracking, water that would likely be taken from local sources. The water used must be treated after it returns

to the surface, because it contains the chemicals introduced, as well as salts and naturally occurring radioactive materials that were in the shale.

The introduction of drill sites into the largely rural communities that lie above the Marcellus Shale also has significant social and economic impacts, said Howe, who emphasized that state and local governments are not adequately prepared to monitor or handle the diverse social and environmental changes that may come with new natural gas drilling.

Howe is part of a Cornell team that is studying how the introduction of shale drilling has changed communities in Pennsylvania. He said that community infrastructure, land values, rental prices, air quality, how residents relate to each other and even crime can be affected by the sudden influx of activity from drilling. Often, local officials are not prepared or do not have the oversight needed to mitigate impacts, he said.

The briefing was the fourth in a series of educational forums on Capitol Hill, sponsored by Cornell's College of Agricultural and Life Sciences and the Cornell University Agricultural Experiment Station, to encourage the inclusion of scientific knowledge in policy debates.

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For more from the Cornell University:

Rodney Louis Howe, Senior Extension Advocate,
<http://research.cals.cornell.edu/allcals/individual/vivo/individual8662>

Susan Jean Riha, Charles L. Pack Professor in the Department of Earth and Atmospheric Sciences, <http://research.cals.cornell.edu/allcals/individual/vivo/individual5227>

Cornell Cooperative Extension to hold public sessions on Marcellus Shale exploration, July 9, 2009 (<http://www.news.cornell.edu/stories/July09/CCEShaleShow.html>; and <http://research.cals.cornell.edu/allcals/individual/vivo/CornellCooperativeExtensiontoholdpublicsessionsonMarcellusShaleexploration>).