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## Comments on papers

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Comm 5660  
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## Basics

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- ◆ Good at not getting too technical
- ◆ Pretty good about short paragraphs (“grafs”).
- ◆ Strive for simple grammar/sentence structure:  
“Unfortunately for many of these networks, like the networks that link together the sugars, fats, and proteins our bodies depend on to do their jobs, it is difficult do directly measure the connections between them.”



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## Connect with readers: Human actors

- ◆ Human actors
- ◆ ORIGINAL: “An active area of research here at Cornell investigates how specific genomic ‘roads’ are selected for epigenetic modification, while the next block over is not.”
- ◆ BETTER: “Researchers at Cornell are investigating how specific genomic ‘roads’ ....”



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## Connect with readers: (word) Images

- ◆ “Using molecular biology techniques Cornell scientist Sarah M. Carver is **digging** through the DNA of microbes in **soil** to find the next Roundup or alternative to fertilizer.”



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## Challenges: Teacher audience, 1

- ◆ Food webs are one of the classic examples used to introduce the concepts of ecological communities or ecosystems to students. Changes in the environment can have an important impact on interactions among species in a food web. This can happen because species move or go extinct, but also because species adapt to new environments. Including examples from new research on how communities are affected when species adapt to new environments may help introduce students to the idea of evolution in a new, relevant way.



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## Challenges: Teacher audience, 2

- ◆ Most students are familiar with where fossil fuels come from and that their combustion produces greenhouse gases. But do your students know of the geoscientists who are responsible for mapping Earth's subsurface and predicting how oil, gas and geothermal drilling operations could affect the environment over many generations? One great source of information for potential earth science lesson plans is a group of scientists and their graduate students in the Earth and Atmospheric Sciences Department at Cornell University. The Shale Geomechanics workgroup is an interdisciplinary team of geologists and engineers who are working to understand the behavior of shale rock when it makes contact with the various fluids used in energy production and extraction.



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## Different audiences, different text

- ◆ *Daily Sun*: A team of Earth Energy researchers at Cornell University have assessed the geothermal energy potential in the Finger Lakes region. They have determined that Ithaca is a candidate for geothermal energy development.
- ◆ *Blog*: This study found that using detailed geologic properties led to more certainty in the magnitude and location of predicted geothermal resources. More certainty means less money spent in the development of geothermal energy systems.



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## Really nice comparisons, 1

- ◆ Cell membranes are essentially the walls that separate the interior of the living cell from the environment, much like a wall that protects the house, it prevents the entry of toxic substances into the organism. (Siddarth)
- ◆ One major reason these patients remain ill despite undergoing surgery to remove the tumor is that some cancer cells are inadvertently left behind, and these grow into more tumors. This is analogous to cutting off the head of a monster only to have two grow back. (Foo)



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## Really nice comparisons, 2

- ◆ Much like wind turbines spin and generate electricity, boiling hot water from the ground can also create “wind” that spins a turbine and produces electricity. (Hawkins)
- ◆ Imagine tapping the surface of the earth with a straw as if you wanted to drink coconut water from a coconut shell in a very hot day at the beach. Once you are able to puncture the surface of the coconut you have a vast amount of delicious coconut water that will refresh you. Geothermal energy can be tapped in a similar way. [Aguirre]



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way. [Aguirre]

## Really nice comparisons, 3

- ◆ Imagine now that the heat sources (rocks) are like the jets in a hot tub: it's hotter near the jets than farther away. Also, the jets are not always evenly distributed, and therefore the heat is greater in one part of the tub than the rest. Locating those hot spots where the jets are is better to warm you up. This is a challenge faced by geothermal energy – finding the hot spots. [Smith]
- ◆ Chu: Genes may be the roadmap to life, but more and more scientists are investigating the molecular “traffic signs” that direct genetic activity.



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## Really nice comparisons, 4

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- ◆ McGregor: Imagine asking a giant to fit into a hobbit hole. This wouldn't be easy, would it? That analogy is how scientists like to think of cancer cells migrating from one organ to another. In order for the cell to move they must push proteins out of their way, and that is no easy task. This process is called metastasis.

