

## GLOBAL WARMING 101:

# Changing hearts & minds

BY PETER JARET

First, a simple question. How exactly do rising carbon dioxide levels in the atmosphere cause global warming?



Photo / Dr. Michael Ranney with a colleague at UC Berkeley.  
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Before you read on, take a minute or two to come up with an answer.

Done? If you found yourself struggling, you're in good company. When Michael Ranney, Ph.D., a professor of education, psychology and cognitive science at the University of California, Berkeley, and his students surveyed 270 college students and visitors to parks in San Diego, they found a woeful lack of knowledge about the mechanisms that cause global warming. Only 12 percent of his respondents mentioned gases in the atmosphere trapping heat. None brought up the difference between visible and infrared light, a critical feature of this greenhouse effect. In fact, even though global warming is essentially due to an extra, human-caused greenhouse effect, only 3 percent mentioned the greenhouse effect at all.

"Basically, no one could explain the mechanism of global warming, even at a fairly basic level," says Ranney, who also chairs UCB's Graduate Group in Science and Mathematics Education (also known as "SESAME").

Given the lamentable results, he and his colleagues began to wonder if ignorance was one reason why a surprising number of Americans remain skeptical of global warming, even though the evidence for climate change is now virtually certain. "The question we asked is, could a better understanding of the mechanisms at work convince people and change attitudes?" says Ranney. To find out, his team created a 400-word explanation of the mechanism of global warming. Groups of undergraduates at Berkeley and at the University of Texas at Brownsville were asked to answer survey questions about atmospheric CO<sub>2</sub> and global warming and then read the short scientific explanation. Surveys conducted later showed that a dramatic increase in the students' understanding of the mechanisms at work and an increase in their acceptance of global warming and concern about doing something to address the problem.

"What we found is that a little bit of knowledge really can be powerful in shaping people's attitudes," says Ranney. To change more hearts and minds, he and his colleagues have launched [howglobalwarmingworks.org](http://howglobalwarmingworks.org), a website that offers five informational videos. All five videos explain, in varying levels of detail, the science behind CO<sub>2</sub> and other greenhouse gases. The longest is about 5 minutes; the shortest clocks in under 1 minute. Ranney's team is currently studying how users navigate the site in order to determine which video presentations are most effective.

"Global climate change is one of the biggest problems we face. But we have the solutions. What we lack is the political will," says Ranney. "By helping people understand the science, we're hoping to change that. We don't have a particular axe to grind. We're just in this to help ensure the future for the next generation of folks and other critters." ■