Fred and Wilma helped blur science perception

By Jeff Grabmeier

Just call it the "Flintstones Effect." Researchers have found that two-thirds of Americans believe that the first humans lived at the time of the dinosaurs, while only one-third of British citizens share that erroneous belief.

"That, I think, is demonstrably the result of the fact that the BBC never carried "The Flintstones," said Jon D. Miller, a professor of political science at Northern Illinois University and an expert on science literacy.

"In fact, while Americans were watching Fred Flintstone, the British were watching some pretty good science programs."

Miller discussed the science literacy crisis in the Boyd H. Bode Memorial Lecture, which he gave at Ohio State May 10. The lecture is sponsored by the Department of Education.

However, Miller said that even though the British didn't watch "The Flintstones" — the popular cartoon featuring a prehistoric family who used dinosaurs for transportation — they weren't learning science, either.

In Miller's 1988 study of American adults, he found only 6 percent who could be called scientifically literate. A similar study conducted at the same time in Great Britain showed that 37 percent of its citizens were scientifically literate.

"We used to think that a person who couldn't sign his name was illiterate," he said. "In recent years we have realized that a literate person has to be able to do more than sign his name."

Literacy involves all those skills necessary to function in society, and that includes basic knowledge of science, Miller explained.

Miller's research measured science literacy by testing people's understanding of the process and methods of science, basic terms and concepts and impact of science on society.

Just how much do U no?

Here are some of the questions Jon Miller's study asked to determine if Americans were scientifically literate:

1) The oxygen we breathe comes from plants. True or False?
2) Electrons are smaller than atoms. True or False?
3) Lasers work by focusing sound waves. True or False?
4) The continents on which we live have been moving their location for millions of years and will continue to move in the future. True or False?
5) The earliest human beings lived at the same time as the dinosaurs. True or False?

5 are false... and 1, 2, and 3 are true... and believing that they are too difficult."

Miller also blamed the "systematic starvation of our public schools" as another culprit. Schools should not have to rely on property taxes and local referendums as their primary source of funds.

Underfunding and low teacher salaries mean that schools often cannot get or keep talented and knowledgeable science and math teachers.

But Miller noted that the achievement of scientific literacy among American high school graduates "will take longer and cost more than putting a man on the moon."

Joan Leitzel, associate provost for academic affairs, and Kenneth G. Wilson, Youngberg Professor of Physics and Nobel Laureate, responded to Miller's remarks.

Leitzel noted Miller's finding that the factor most strongly related to science literacy among Americans was whether a person took one or more college-level science courses.

Under the new curriculum now being developed at Ohio State, undergraduates will take at least four science courses, arranged in a sequence, she said.

In his remarks, Wilson said that a key to developing science literacy in America will be retraining teachers so that they are qualified and able to teach basic science concepts.

Too many elementary and high school teachers don't teach the elementary concepts that make up science literacy, Wilson said.