

## SCIENCE EDUCATION

## Florida Standards Support Evolution—With a Twist

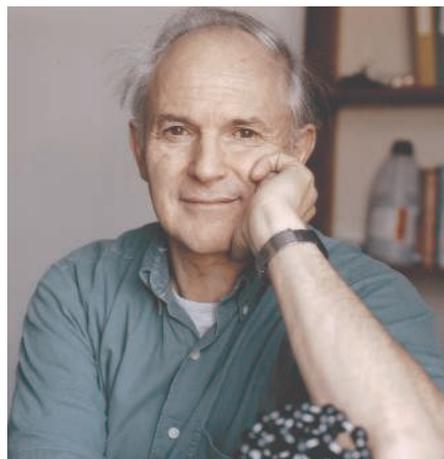
Florida scientists declared victory last week after the state Board of Education approved science standards that for the first time explicitly embrace the teaching of evolution. But antievolution activists are claiming that the vote bolsters their position that evolution is a “just a theory” and therefore unproven. Such is life on the front lines of the continuing battle over teaching evolution in U.S. schools.

The basis for the dueling claims is a last-minute change by state school officials to a document drafted by an advisory committee made up of scientists, educators, and the public. In lieu of evolution, the standards now refer to “the scientific theory of evolution.” State education officials say the new wording was intended to appease conservatives without compromising on accuracy. To be consistent, officials applied the same wording to every other scientific concept mentioned in the standards, for example, changing “photosynthesis” to “the scientific theory of photosynthesis.”

The changes were made after state Representative Marti Coley phoned in during a 4 February conference call to the board and asked that the word “theory” be added to the draft standards. Mary Jane Tappen, director of the education department’s Office of Mathematics and Science, then talked with members of the standards writing committee and other scientists. The additional words may make the document “cumbersome,” she admits, “but some of us felt the document got better.”

On 19 February, the board voted 4 to 3 to approve the revised version. Two members who voted with the majority—Linda Taylor and Kathleen Shanahan—had asked that the word “theory” be included. But two who voted against adopting the standards—Roberto Martinez and Akshay Desai—said they were angered by the last-minute rewording. “What’s going on here is an effort by people who are opposed to evolution to water down our standards,” Martinez said before casting his vote.

Nobelist Harold Kroto, a chemistry professor at Florida State University (FSU) in Tallahassee who helped rally public support for the standards, believes the new language allows scientists and teachers to make a clear distinction between scientific and unscientific theories. “The original standards were fine, but this might actually be better in the long run,” he says. “The phrase ‘scientific theory’ gives us leverage to differentiate between theories that are supported by evidence and those that aren’t.” The simple addition of “theory” would have been disastrous, he adds.



**Different standards.** Nobelist Harold Kroto and Florida legislator Marti Coley disagree on what new science standards say about evolution.

That’s not how some conservatives see it, however. Coley issued a press release soon after the board’s vote “applauding” the decision “to teach evolution as a scientific theory, not a scientific fact as had been earlier proposed.” Coley says the standards now are “inclusive of a variety of viewpoints.”

Some of the 23 individuals on the standards writing committee who had expressed concerns about last-minute changes seem satisfied with the final wording. “Our hackles went up when we heard of the request to add ‘theory’” just to the references to evolution, says Sherry Southerland, a science education professor at FSU. “But we felt that putting the language throughout the standards would take care of that concern.”

Tappen believes that the new standards leave no room for the teaching of alternative ideas about how life came to be, at least not in a science class. “Theories that are not scientific may be discussed in a humanities or a comparative religion course,” she says. But the difference may not be clear to everyone, concedes FSU evolutionary biologist Joseph Travis. “If somebody wants to say a particular religious idea is a scientific theory, that’s another issue.”

The change failed to appease board member Donna Callaway, who had been pushing for an amendment to allow the teaching of alternatives to evolution. And the Seattle, Washington–based Discovery Institute, which advocates teaching students to question evolution, called the new wording “an impotent change.” An analysis of the new standards posted on its blog carried this headline: “Florida State Board Tricked Into Meaningless ‘Compromise’ to Retain Dogmatism.”

Hard-liners unhappy with the standards don’t intend to let the matter rest. In a 21 February interview published in the *Florida Baptist Witness*, an organ of the Florida Baptist State Convention, the speaker of the state House of Representatives, Republican Marco Rubio, said he and other House leaders are considering introducing legislation to allow teachers to teach criticisms of evolution.

Callaway says she would support such an effort. “People have asked me why I don’t question math concepts or grammar,” she explained to *Science*. “I tell them, ‘Those things have nothing to do with life. Evolution is personal, and it affects our beliefs.’”

—YUDHIJIT BHATTACHARJEE