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Although a proposal to remove the controversial "Critical Analysis of Evolution" lesson plan from the Ohio model science curriculum was narrowly defeated at the January meeting of the Ohio state board of education, the proposal is likely to be renewed at the board's February meeting, thanks to both a thinly disguised reproach from Ohio Governor Bob Taft (R) and a stinging rebuke from a large majority of the committee that originally helped to develop the standards. Defenders of evolution education in the Buckeye State are hopeful that the board will finally reverse its previous compromises with the forces of antievolutionism.

The "Critical Analysis of Evolution" lesson plan corresponds to a similarly controversial indicator in the Ohio state science standards, which called for students to be able to "describe how scientists continue to investigate and critically analyze aspects of evolutionary theory." When the indicator was introduced, it was widely [feared](#) [4] that it would provide a pretext for the introduction of creationist misrepresentations of evolution. The lesson plan proved these fears to be warranted. As [originally submitted](#) [5] (PDF), it was riddled with scientific inaccuracies and pedagogical infelicities, and it even explicitly cited a number of creationist publications.

Facing such [criticisms](#) [6], the proponents of the lesson plan revised it, but only cosmetically -- removing the references to creationist publications and eliminating a number of the glaring errors, but leaving intact the basic structure, the choice of topics (which is indebted to the notoriously misleading [Icons of Evolution](#) [7]), and the overall goal of instilling scientifically unwarranted doubts about evolution. Even as revised, [the lesson plan](#) [8] (PDF) **[Link broken]** was condemned by the [National Academy of Sciences](#) [9] and the Ohio Academy of Sciences, which told Governor Taft that it was "defective because it is not science and has no place in the science curriculum."

Nevertheless, the revision was enough to satisfy a majority of the members of the state board of education. A motion to reject the lesson plan failed by a vote of 10-7, and the whole model curriculum, including the flawed "Critical Analysis of Evolution" lesson plan, was then [adopted](#) [10] by a 13-5 vote. Although teachers are not required to use the model curriculum, because it is based on the standards that also provide the basis for statewide testing, it is expected that they are widely used. Although there was talk shortly after the March 9, 2004, vote of the possibility of a lawsuit over the lesson plan, the public discussion of the plan subsided for a time.

A related controversy surfaced, though, involving a primary author of the lesson plan, Bryan Leonard. In addition to teaching biology at a high school in the Columbus suburb of Hilliard, Leonard was also pursuing a doctoral degree in science education from Ohio State University. Testifying at the "[kangaroo court](#)" [11] hearings on evolution in Kansas in May 2005, Leonard [told](#) [12] a subcommittee of the Kansas state board of education, "the way in which I teach evolution in my high school biology class is that I teach the scientific information, or in other words, the scientific interpretations both supporting and challenging macroevolution."

Leonard's testimony in Kansas aroused the curiosity of three OSU professors, who ascertained the topic of Leonard's dissertation: "When students are taught the scientific data both supporting and challenging macroevolution, do they maintain or change their beliefs over time? What empirical, cognitive and/or social factors influence students' beliefs?" They consequently wrote in a letter to the interim dean of the graduate school, "We note a fundamental flaw: There are no valid scientific data challenging macroevolution. Mr. Leonard has been misinforming his students if he teaches them otherwise" ([quoted](#) [13] in *The Lantern*, June 23, 2005).

The composition of Leonard's dissertation committee was also disputed: *Inside Higher Ed* [reported](#) [14] (June 10, 2005), "Under Ohio State rules, two members of Leonard's dissertation committee should have been in the science education division. But the three members of the committee were in the fields of technology education, entomology and nutrition." Two of those three are supporters of the "intelligent design" movement. After the graduate school representative on the committee that was to hear Leonard's defense of his dissertation resigned and was replaced by the Dean of the College of Biological Sciences, the defense was postponed, apparently at the request of Leonard's advisor.

A spokesman for the university was eager to disavow Leonard's dissertation research, telling *Inside Higher Ed*, "It's a mischaracterization to say that the university was about to award a degree supporting intelligent design or anything else. What we had was a dissertation defense scheduled," adding, "The university was not anything close to legitimizing anything that was not close to the caliber for which we give doctoral degrees." Nevertheless, the "Critical Analysis of Evolution" lesson plan to which Leonard contributed was still in place, with the state board of education's imprimatur, and it was unclear whether it would be challenged.

Then, on December 20, 2005, in the neighboring state of Pennsylvania, the decision in [Kitzmiller v. Dover](#) [15] was issued: teaching "intelligent design" in the public schools was ruled to be unconstitutional. Subsequently, the prospect of a lawsuit over the lesson plan was reignited in Ohio. Robin Hovis, a member of the Ohio state board of education, [told](#) [16] the *Columbus Dispatch* (January 8, 2006), "I think the ruling is a wake-up call to our board that we are out of compliance, at least in that judge's opinion," adding, "I think it would be very unfortunate of us to subject the state of Ohio to costly litigation."

Adding to the pressure on the board was the revelation that the lesson plan was adopted by the board

despite warnings from the Ohio Department of Education, whose experts described it as wrong, misleading, and even manifesting "fringe thinking." A marvelously detailed article in the weekly *Cleveland Free Times* (January 31, 2006) [reports](#) [17] **[Link broken]**, "at least one unnamed ODE staff scientist debunked all eight arguments Leonard had used to challenge evolution. The scientist's comments run the gamut of 'the challenging answer oversimplifies' to 'the challenging answer is wrong' to 'off-topic' to 'the underlined sentence about transitional fossils is a lie.'"

These warnings about the flaws in the "Critical Analysis of Evolution" lesson plan were contained in documents obtained by [Americans United for Separation of Church and State](#) [18] pursuant to a public records act request. Joseph Conn, a spokesman for Americans United, [told](#) [16] the *Dispatch* (January 8, 2006), "We've only gotten part of what we've asked for, but we see much of the same pattern of introducing religion through a backdoor means." Patricia Princehouse of [Ohio Citizens for Science](#) [19] added, "The documents demonstrate this board had a religious intent and that board members who said they had no idea this was bad science lied."

The state's major newspapers editorially urged the board to take the opportunity to remove the lesson plan and even the corresponding standard. The *Dispatch*, for example, [observed](#) [20] (January 10, 2006), "It's misleading for the standards to require that Ohio students describe how 'scientists today continue to investigate and critically analyze aspects of evolutionary theory.' The not-so-subtle suggestion is that evolution is on shakier scientific ground than all other theories," and concluded, "The board should do Ohio children a giant favor and, at the same time, spare taxpayers the risk of costly litigation. Drop this bogus standard and its 'disclaimer.'"

At the January 10, 2006, meeting of the board, however, a proposal, introduced by Martha Wise, to remove the lesson plan from the model curriculum was narrowly defeated in a 9-8 vote. The meeting was reportedly acrimonious; the *Dispatch* (January 11, 2006) [reported](#) [21] that after Wise observed that it had been the intention of at least two members to introduce "intelligent design" into the state science standards, her fellow board members Michael Cochran and Deborah Owens-Fink -- both firm supporters of the lesson plan -- took umbrage. Robin Hovis reminded the board that Owens-Fink had, in fact, introduced a proposal to teach "intelligent design" previously.

The acrimony was not confined to the members of the board. After reviewing videotapes of the meeting, the *Dispatch* (January 20, 2006) [described](#) [22] a number of board members -- particularly Cochran and Owens-Fink -- as "badgering and berating" the witnesses who testified about the flaws in the lesson plan. At one point, Cochran began to read a newspaper while Brian McEnnis, a professor of mathematics at Ohio State University, was speaking; when McEnnis remonstrated, Cochran interrupted both McEnnis and then the president of the board when she sought to intervene. Interviewed by a *Dispatch* reporter, Cochran and Owens-Fink offered no apology.

Both the vote to retain the lesson plan and the behavior of the board members who supported it received criticism from the state's newspapers. The *Toledo Blade's* editorial (January 14, 2006) was especially outspoken, [describing](#) [23] the nine board members who voted in favor of the lesson plan as "right-wing ideologues" and the board as a whole as "a painful carbuncle on the posterior of state government." The *Dispatch* (January 15, 2006) [noted](#) [24] that "[r]egardless of how board members cast their votes, they owe the people who come before them their attention and respect" and recommended that voters bear it in mind at the next election.

During the meeting, Cochran tried to defend the lesson plan by referring to the grade of B that Ohio's

science standards recently received in a [report](#) [25] conducted by the Fordham Foundation, as if to imply that the authors of the report approved of the lesson plan as well. In response, the authors, led by the eminent biologist Paul R. Gross, issued a [statement](#) [26] reading, in part, "Any suggestion that our 'B' grade for Ohio's standards endorses sham critiques of evolution, as offered by creationists, is false. ... If creationism-driven arguments become an authorized extension of Ohio's K-12 science standards, then the standards will deserve a failing grade."

The furor over the meeting evidently sparked the interest of Governor Taft, who [told](#) [27] the *Dispatch* (February 3, 2006) that there should be a legal review of the lesson plan to ensure that the state is not vulnerable to a lawsuit. "The governor also said he should have asked his previous appointees to the State Board of Education more questions about their position on the controversial issue, and that he will be asking about it before making future appointments," the *Dispatch* also reported. Eight of the seats on the board of education are appointed by the governor, and four of these are due to be vacant at the end of the year; Governor Taft's term expires in 2007.

Meanwhile, in a [letter](#) [28] addressed to Governor Taft dated February 7, 2006, a large majority -- seventy-five percent -- of the members of the Science Content Standards Advisory Committee, which helped to develop the Ohio state science standards in 2002, protested the "Critical Analysis of Evolution" lesson plan, describing it as "a pointed attempt to insert old and discredited creationist content in Ohio's science classrooms," "wholly without merit," and "a disservice to Ohio's children and an insult to the intelligence of its good citizens."

The next meeting of the Ohio state board of education is on February 13-14, 2006. A hopeful sign, in addition to the remarks of Governor Taft and the letter from the members of the advisory committee, is that one of the two members of the board who were absent from the January 10 meeting, Virgil Brown, [told](#) [29] the *Dispatch* (January 12, 2006) that he was ready to "withdraw or amend" the "Critical Analysis of Evolution" lesson plan, encouraging defenders of evolution education in the Buckeye State. Although consideration of the lesson plan is not on the agenda for the next meeting, it is clear that pressure is mounting on the board to take action.

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[4] http://www.ncseweb.org/resources/news/2002/OH/379_science_standards_move_forward_10_29_2002.asp

[5] http://science2.marion.ohio-state.edu/ohioscience/L10-H23_Critical_Analysis.pdf

[6] <http://science2.marion.ohio-state.edu/ohioscience/lesson-plans.html>

[7] <http://www.ncseweb.org/icons/>

[8] http://ims.ode.state.oh.us/ODE/IMS/Lessons/Content/L10H23_Critical_Analysis_of_Evolution.doc.pdf

[9] http://science2.marion.ohio-state.edu/ohioscience/NAS_Letter.html

[10] http://www.ncseweb.org/resources/news/2004/OH/832_critical_analysis_of_evolutio_3_10_2004.asp

[11] http://www.ncseweb.org/resources/news/2005/KS/893_all_over_but_the_shouting_in_k_5_13_2005.asp

[12] <http://www.talkorigins.org/faqs/kansas/kangaroo5.html#p2093>

- [13] <http://www.thelantern.com/media/paper333/news/2005/06/23/Campus/Osu-Takes.Closer.Look.At.Graduate.Students.Disser-tation-958954.shtml>
- [14] <http://www.insidehighered.com/news/2005/06/10/osu>
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- [16] <http://www.columbusdispatch.com/news-story.php?story=dispatch/2006/01/08/20060108-D1-02.html>
- [17] <http://www.freetimes.com/modules.php?op=modload&name=News&file=article&sid=3023>
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- [21] <http://www.columbusdispatch.com/news-story.php?story=dispatch/2006/01/11/20060111-A1-00.html>
- [22] <http://www.columbusdispatch.com/news-story.php?story=dispatch/2006/01/20/20060120-D1-04.html>
- [23] <http://www.toledoblade.com/apps/pbcs.dll/article?AID=/20060114/OPINION02/60114030/-1/OPINION>
- [24] <http://www.dispatch.com/editorials-story.php?story=dispatch/2006/01/15/20060115-B4-00.html>
- [25] http://www.edexcellence.net/detail/news.cfm?news_id=352
- [26] http://www.pandasthumb.org/archives/2006/01/ohio_fordham_ev_1.html
- [27] <http://www.dispatch.com/news-story.php?story=163812>
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