

**RECOMMENDATIONS FOR FURTHER REVISION TO THE FIRST DRAFT
OF
KANSAS SCIENCE EDUCATION STANDARDS**

December 10, 2004

Members of the Kansas State Board of Education
Topeka, Kansas

Re: Kansas Science Education Standards, Draft 1 dated October 28, 2004 that was
delivered to the Board on December 7, 2004

Ladies and Gentlemen,

A disagreement exists within the Science Writing Committee with respect to the information that should be provided to students about the origin of life and its diversity. There is general agreement that standard biological evolutionary theory must be presented. However, Draft 1 implicitly discourages critical analysis of the theory. This implication is reinforced by the absence of any learning objective that would inform students of important evidence inconsistent with evolution's critical assumptions and historical narratives. This is in spite of agreed upon standards that explicitly state that students should critically analyze all scientific theories and consider competing alternatives.¹

This raises two concerns:

1. Preventing critical analysis has the effect of converting biological evolution from a theory into a dogma. "Theories" that are impervious to criticism become ideologies. At a time when students are well aware that a controversy over the teaching of evolution is raging in this country, we feel that they should know about the areas of scientific disagreement.
2. Draft 1 presents a purely naturalistic perspective on a question ("Where did we come from?"), the answer to which has profound implications for ethics, religion and government. This restriction is assumed to be a means of keeping public science education free from religion. However, "religion" includes both theistic and non-theistic beliefs. The naturalistic view that physical and chemical laws plus chance are adequate to explain all natural phenomena supports non-theistic religions and belief systems, while the competing view, that some form of intelligence may be involved, supports traditional theistic beliefs. The approach reflected in Draft 1 arguably has the effect (whether intended or not) of denigrating one kind of religion while promoting another. Public education can be kept free of religion by teaching origins science objectively.

¹ "As part of conducting an inquiry, formulates and revises his or her scientific explanation and models (physical, conceptual or mathematical) using logic and evidence, recognizing potential alternative explanations and models should be considered." (12th Grade, Standard 1, Benchmark 1, Indicator 4 of Draft 1; see also 12th Grade Standard 1, Benchmark 1, Indicators 5 and 6 of the Current Standards).

The fundamental mission of education is to inform students and to teach critical thinking skills. Ill-informed students become citizens ill-equipped to make good decisions that affect their lives. For this reason, we urge the State Board to adopt standards that will allow a more complete scientific discussion of the data regarding origins. The education system should take the lead in helping students understand public controversies.

Our attached proposals seek to effect two key changes:

1. Reinstate a traditional definition of science: “***Science is a systematic method of continuing investigation that uses observation, hypothesis testing, measurement, experimentation, logical argument and theory building, to lead to more adequate explanations of natural phenomena.***” This replaces a naturalistic definition used by the current science standards. We believe science should be guided by the evidence rather than by any particular philosophy of what explanations should and should not be allowed.
2. Encourage students to critically analyze the theory of biological evolution.

Some have argued that the teaching of intelligent design, a scientific alternative to naturalistic theories of origins, should be required. At this point in time, we do not agree with this. Rather, we suggest that teachers be allowed to address scientific alternatives at their own discretion if they sense that it is appropriate for a given class.

We think that *more* should be taught about evolution, not less. Critical thinking about the evidence should be encouraged. We believe our suggestions are not only consistent with good science education, but also consistent with the views of most of the patrons of public education, the convictions of a number of highly regarded scientists, the guidance of the US Congress and the requirements of the First Amendment. Polls conducted in the last four years around the country show that nearly 80% of the public favor a more objective presentation of biological evolution. A growing number of scientists have publicly stated their skepticism about the adequacy of natural selection to explain all of the diversity of life. In 2001 Congress embraced a report urging that the controversy surrounding evolution be presented. Finally, holdings of the Supreme Court indicate that public education which officially suppresses one side of the origins debate is inconsistent with the role of the state to be “neutral” as to religion.

We applaud the work of our colleagues during the past six months, and are in complete agreement with them regarding the vast majority of the material in Draft 1. Accordingly, we believe that Draft 1 is a major improvement over existing standards. Our proposals are intended to supplement their excellent and dedicated work.

At the end of the *Origin of the Species*, Charles Darwin expressed this hope:

“I look with confidence to the future, to young and rising naturalists, who will be able to view both sides of the question with impartiality.”

In *Edwards v. Aguillard*, the Supreme Court expressed a similar view:

“If the Louisiana Legislature's purpose was solely to maximize the comprehensiveness and effectiveness of science instruction, ***it would have encouraged the teaching of all scientific theories about the origins of humankind.***⁸ But under the Act's requirements, teachers ***who were once free to teach any and all facets of this subject*** are now unable to do so.²

We urge the State Board to implement the expectations of both Darwin and the Supreme Court by giving favorable consideration to our Proposed Revisions. The full text of the proposals in context, together with explanations is shown in the Attachment. A summary of the proposals is shown on the first page of that Attachment.

We are submitting our Proposals at this time because we believe they reflect a significant and substantive viewpoint that should be considered by the Board and the Public during the public comment period that will commence in January.

Given the nature of this controversy, we also encourage the Board to conduct formal hearings to gather expert opinions regarding the issues raised by this letter.

Thank you for your kind consideration of these recommendations.

FOR THE PROPONENTS



William S. Harris, PhD

The Proponents:

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William S. Harris, PhD (Medical School Professor & Research Biochemist)

Greg Lassey, MS (Former Middle School Science Teacher)

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Wayne Stringer, MS (Former Biology, Microbiology, Anatomy and Physiology Professor)

Richard Unruh, MS, (High School Science Teacher)

John Yost, MS (Jr College Science Teacher)

Attachments: Proposed Revisions in context and with explanations

cc: Chair, Co-Chair and Members of the Committee

John Calvert, Esq.

² *Edwards v. Aguillard*, 482 U.S. 578, 588-9 (1987).