



Closing Argument

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Representing mainstream science as reflected in Draft 2 as
submitted by the Kansas Science Writing Committee

March 12, 2005



Introduction and Outline



1. I represent Draft 2 of the science standards. I support mainstream science, the position of the Coalition for Science, and the boycott of these hearings by scientists.
2. Draft 2 accurately represents science as neutral in respect to the nature of spiritual reality. The Minority report, however, advances a narrow theological view of science that conflicts with mainstream Christianity and many other faiths.
3. These hearings have been an unjustified waste of taxpayer money intended
 - to justify the Board's support for inserting creationist claims into the science standards, and
 - to provide a showcase for the national Intelligent Design movement.
4. The Minority report and witnesses have misrepresented many educational issues, including the role of standards and the Draft 2 position on teaching students the skills of scientific inquiry.



Outline (continued)

5. The Minority report's position on allowing supernatural causes in science and their denial of common descent are **not** genuine scientific controversies. The Intelligent Design movement's anti-evolutionary claims have had virtually no impact on mainstream science.
6. The state of Kansas is being used by the national Intelligent Design movement and their Wedge strategy.
7. Consequences of adopting the minority proposals include harming the scientific education of children, harming the reputation of Kansas, harming our ability to attract bioscience and related industries to Kansas, and risking spending thousands of dollars on potential court cases.
8. There are serious legal issues associated with the Minority report
 - establishment clause issues: the Minority position advances a particular theological view and does not advance a secular purpose:
 - issues concerning the abuse of discretionary power by the Board
 - issues concerning the requirement of the state to provide an adequate education.



Our position

My client is Draft 2 of the standards. Draft 2 represents the legitimate work of the writing committee empowered and chosen by the state Board of Education.
(Exhibit: [Draft 2](#))

I have joined the Coalition for Science in calling for the Board to adopt Draft 2.
(Exhibit: [Coalition for Science Position Paper](#))
(Exhibit: [Open letter to Board from 45 Kansas university professors](#))
(Exhibit: [Open letter to Board from 19 Kansas State University professors](#))

I also support the boycott of these hearings by scientists worldwide.
(Exhibit: [Boycott Resolution called by Kansas Citizens of Science](#))
(Exhibit: [AAAS Resolution](#)) (American Association for the Advancement of Science)



The nature of science, and Intelligent Design theology

Outline

1. Draft 2 is neutral in respect to the nature of spiritual reality.
2. Members of many faiths, including mainstream Christians, find no conflict between their theological beliefs and the fact that science "seeks natural explanations of what we observe in the world around us," as stated in Draft 2.
3. The Minority report claims science as an atheistic enterprise that implicitly endorses the philosophy of naturalism - the position that there is no spiritual reality.

This is incorrect. Draft 2 does not mention "naturalism", "unguided", "purposeless" or any of the other attributes of science that the Minority claim are in Draft 2.
4. The Minority report, and the Intelligent Design movement in general, denounce and reject the beliefs of those people of faith who accept science and evolution.
5. The Minority report, however, advances a narrow sectarian theological view of science that conflicts with mainstream Christianity and many other faiths.
6. The actions of the state Board in advancing the Minority report by holding these hearings raises serious legal questions about violations of the establishment clause of the United States constitution and the Kansas Constitution.



Draft 2 is neutral in respect to spiritual reality

1. Draft 2 accurately states that "Science is a human activity of systematically seeking natural explanations for what we observe in the world around us."
2. Draft 2 does not state explicitly or implicitly that science is the only way of explaining the world, nor that the physical world which science investigates is all there is to reality.
3. Draft 2 does not endorse philosophical naturalism nor atheism. The words and concepts "naturalism," "unguided," "purposeless," etc. do not appear in Draft 2
4. Standard 7, Benchmark 1, Indicator 5, grades 8-12 of draft 2 says,

"The student understands there are many issues which involve morals, ethics, values or spiritual beliefs that go beyond what science can explain, but for which solid scientific literacy is useful."

This sentence, written with the input of Minority members of the committee, clearly says that science does not claim to offer a complete explanation of the world, and that Draft 2 recognizes the importance of "morals, ethics, values or spiritual beliefs."
5. However, Minority witness Roger DeHart, when asked to comment on the fact that this statement clearly did not endorse naturalism, replied that the statement was "bogus."



Many people of faith, including many Christians, accept science

1. Many people of faith, including many Christians, accept science as the limited enterprise of seeking natural explanations.
2. This does not conflict with their theistic beliefs because they believe that God acts in the physical world through natural causes.
3. They understand that science does not claim to answer all questions about the world, not does it claim to offer a complete human explanation about any part of the world.

Such people are often called "theistic evolutionists" in respect to evolution.

Keith Miller, an evangelical Christian and a Kansas University geology professor, gave a talk last Wednesday on "Ending the 'Warfare' of Science and Faith." (Exhibit: "Ending the 'Warfare' of Science and Faith.")

A few samples slides:

[God is a God of Process](#)

[The Nature of Science](#)

Recently a group of clergy in Wisconsin wrote a letter to school officials about this issue. At this point, over 3500 clergy have signed their letter endorsing their position. (Exhibit: [Wisconsin Clergy statement](#))



The Minority report claims science is atheistic

1. The Minority report and the Minority witnesses make it clear that the core argument of the Minority is **a theological argument that science, by seeking natural explanations, is atheist and materialistic - an expression of the philosophy of naturalism.**
2. The Minority's strategy is to claim that science is atheistic in order to then claim that their theistic beliefs – design, must be inserted into science. They want to change the definition of science to add supernatural causes.
3. Here are some quotes from the Minority report. [Quotes, and a response.](#)
4. Also, the Minority propose the following in the grades 8-12 Benchmark on Evolution:

"Biological evolution postulates an unpredictable and **unguided** natural process that has no discernable direction or goal. It also assumes that life arose from an **unguided** natural process." [My emphasis]

Notice that it is the Minority that wishes to insert this theological description of evolution. Draft 2 correctly understands that the question of divine guidance is beyond the scope of science.



The Minority report, Minority witnesses and the Intelligent Design movement leadership denounce and reject theistic evolutionism

The Minority report, in claiming that science is atheistic, lumps the theistic evolutionists mentioned early in with the "non-theistic religions and belief systems like Secular Humanism, atheism, agnosticism and scientism."

The Intelligent design movement strongly rejects theistic evolution as a legitimate Christian perspective.

[Here are some quotes.](#)

Also, last Saturday, when Minority witness Angus Menuge, a philosophy professor at Concordia University in Wisconsin, was asked about scientists who have theistic beliefs and also accept evolution, he said,

"The mere fact that you have somebody who holds two beliefs, A and B, does not show that they are logically consistent," he said. "It might be that some of these people are confused."

As reported in numerous newspapers, this amused many in the audience, some of whom wore name tags saying "Confused" for the rest of the day.



Conclusion about the nature of science and Intelligent Design theology

The Minority is wrong that science, by seeking natural causes, is atheistic and materialistic.

The Minority denounces the position of Christians and others who believe that science and their faith do not conflict

The Minority wants to insert their interpretation that science is atheistic into the standards in order to knock down this "strawman definition" that they themselves have created.

The Minority is using science and the state science standards as a vehicle to advance their narrow sectarian theology over other theologies including mainstream Christianity.

This is **not** about science. It is about the Minority's fight with naturalism, secular humanism, and atheism. They are misrepresenting science and abusing the state's public education system to wage a needless cultural and theological battle.



Legal conclusions

Whereas the Minority position is a theological view of God that rejects science as atheistic; and

Whereas the Minority position also rejects commonly held theistic views, including those of many mainstream Christians;

Therefore, by advancing the Minority position through these hearings and other actions, the state Board is advancing a narrow sectarian theological view of science over many other faiths, and

Therefore, the Boards actions therefore raise real and serious legal questions about violations of the establishment clause of the Unites States constitution, the Kansas Constitution, statutory authority, and an abuse of discretionary power.



The Abuse of the Political Process

I. The Board has not followed established procedures for developing standards.

They have given the Minority special privileges, such as allowing them to work outside the committee process.

They have allowed John Calvert unprecedented and unjustified access to and influence over the Board's activities.

The Board subcommittee collaborated with Calvert outside of the public process in proposing and organizing these hearings.



The Abuse of the Political Process |

2. Board subcommittee members clearly stated that their goals were to “rebut evolution,” put “evolution on trial,” and to carry through on their campaign promises to put creationist ideas into the standards.

For instance, Connie Morris was quoted as saying, “I absolutely am getting more than enough information to arm me to respond to the question, “Are you getting evidence that refutes Darwinian evolution.”

Kathy Martin, quoted in the Seattle Times, said, “Evolution is a great theory, but it is flawed. There are alternatives. Children need to hear them. We can’t ignore that our nation is based on Christianity, not science.”

Board subcommittee members were clearly unqualified and unprepared to judge the the so-called “expert testimony” provided at the hearings.

Some Board subcommittee members, (as well as many witnesses,) had not read Draft 2.

Some Board subcommittee members, in asking questions of the witnesses, clearly demonstrated a number of times that they did not understand the science being mentioned by the witnesses.

Some Board subcommittee members acted at times like cheerleaders for the witnesses, giving them two thumbs up or solitary high-fives.



The Abuse of the Political Process |

3. The Board spent many thousands of dollars on the hearings.

\$5000 (originally scheduled to be \$20,000) on expenses for witnesses

\$5000 or so for daily court reporting services

Innumerable hours of KSDE staff time, as well as KSDE resources

Costs for publishing transcripts of the hearings

Security expenses



Educational Issues

1. The role of standards is to outline core, fundamental concepts in a subject.
2. Standards do not prohibit anything from being taught. School districts and individual teachers use the standards as a framework in which to add more content and pedagogical material.
3. Draft 2 clearly encourages critical thinking and the evaluation of alternative hypotheses.

Draft 2, Standard 1, Benchmark 1, Indicator 4, grades 8-12 on Inquiry, states,

“The student actively engages in conducting an inquiry, formulating and revising his or her scientific explanations and models (physical, conceptual, or mathematical) using logic and evidence, and recognizing that potential alternative explanations and models should be considered.”

and the Introduction to Draft 2 states,

The standards “call for students to engage in inquiry science in the context of science content. In inquiry science, students describe objects and events, ask questions, construct hypotheses, test those hypotheses against current scientific knowledge and standards of evidence, and have the opportunity to devise experiments or other tests of their explanations.

Finally, students will communicate their findings to others. They identify their assumptions, use critical and logical thinking, and consider alternative explanations. In this way, students actively develop their understanding of science by combining scientific knowledge with reasoning and thinking skills.”



Educational Issues

The Minority and the Minority witnesses consistently misrepresented the role of the standards and the position of Draft 2 on the student’s ability to address and consider critiques of science, including evolution.

1. The Minority repeatedly claimed, explicitly or implicitly, that unless their anti-evolutionary critiques of evolution were put in the standards, students would be prohibited from even asking questions about evolution

This is completely false. The Minority seem to have little real familiarity with the reality of public school education, the attitudes of real science teachers, or the work teachers do to develop a curriculum that teaches both the content and process of science

2. Minority witnesses claimed that unless the Minority’s proposals were adopted, we would be teaching students nothing but “rote memorization” and treating students like “robots.”

In fact, critical thinking is the number one goal of most teachers, irrespective of subject area. The insistence that without the Minority proposals, students would be merely taught to uncritically accept dogma, like robots, is insulting to Kansas’ science teachers and our children.

🏠 Science and the development of scientific knowledge |

The **world's** scientific community has a well-established process for developing new scientific knowledge.

This process includes developing testable hypotheses, developing methodologies for gathering data, publishing the results and analysis of the data, responding to feedback from others, and so on. In this way, solid consensus arises about what is well known.

As Draft 2 says (and part of which the Minority wants to omit,)

"A theory is a broad explanation that integrates a wide range of observations and tested hypotheses, inferences, and laws (when applicable) into a meaningful and coherent whole.

The core theories of science have a high degree of reliability within the limits to which they have been tested and their scope of applicability.

Well established and widely accepted explanations have explanatory and predictive power and are fruitful as guides for further research.

The theory of evolution is such a theory: well-established, well-tested, and accepted world-wide.

🏠 Science and the development of scientific knowledge |

The Intelligent Design movement **does not** participate in the scientific process! They have no testable hypotheses, no research and only a few marginal published papers. There is no "theory of Intelligent Design."

"Intelligent Design theory" is primarily a set of anti-evolutionary and creationist arguments. Keith Miller, in a set of essays written for these hearings, says this: (quote) (Exhibit: Essays by Keith Miller)

The Minority claim that they trying to insert Intelligent Design into the standards, but as Dr. Miller points out, the anti-evolutionary arguments presented in the Minority report are all that Intelligent Design has to offer. If evolution is false, Intelligent Design must be true: that is the Intelligent Design movement's basic strategy.

🏠 The national Intelligent Design movement |

The Discovery institute in Seattle and the Kansas City-based Intelligent Design network, Inc. (with managing directors John Calvert and Bill Harris) are leaders in the national Intelligent Design movement.

Kansas is just the latest in a long line of states in which the national Intelligent Design movement has tried to legislate their ideas into science at the legislative, state Board, or local Board of Education level.

Kansas is being **used** by the national Intelligent Design movement. Only two Kansans (not counting Calvert and Harris) testified as witnesses for the Minority.

🏠 Consequences |

1. The “warfare” between science and faith does lasting damage to both.

Science teachers are inhibited from teaching evolutionary theory fully because of the types of mischaracterizations about both science and faith that permeate our culture and which are reflected in the Minority report.

Our society needs to be discussing these issues, but we should not be making the children of Kansas or the public education system the arena for what should be an adult conversation going on in the public forums.

2. Kansas’ national and international reputation is damaged by once again becoming notorious for these efforts to weaken the teaching of modern science and to insert invalid anti-evolutionary and creationist ideas into our science standards.

3. This harm to our reputation is clear, and will harm our ability to attract biosciences industries to our state. Through the Bioscience Initiative Act, the state of Kansas intends to spend 500 million dollars to attract such businesses, a goal made more difficult by the actions of the Board.



Legal issues

There are a number of associated legal issues that should concern the Board and the citizens of Kansas.

1. Issues involving the establishment clause and the separation of church and state, as explained earlier.
2. Issues involving the abuse of discretionary power. The Kansas Constitution sets requirements for academic and financial responsibility for the state Board. The case can certainly be made that the Board has failed to meet some of these responsibilities in their rejection of mainstream science and their support of the Minority and the Intelligent Design movement.
3. Issues involving the requirement that the Board provide an adequate and suitable education for all children in Kansas. The case can also be made that the Board fails this requirement if, through their adoption of the Minority proposals, they fail to support the teaching of mainstream science, confuse issues of faith and science, and teach failed anti-evolutionary critiques of science as if they were valid.



Some final remarks



The End



Remarks on theistic evolution from leaders of the Intelligent Design movement



Phillip Johnson, founder of the Intelligent Design movement, once said,

“liberal Christians [theistic evolutionists] are worse than atheists because they hide their naturalism behind a veneer of religion.” (University of Kansas, April, 2000)

William Dembski, the main theorist of Intelligent Design writes,

“Design theorists are no friends of theistic evolution. As far as design theorists are concerned, theistic evolution is American evangelicalism’s ill-conceived accommodation to Darwinism. What theistic evolution does is take the Darwinian picture of the biological world and baptize it, identifying this picture with the way God created life. When boiled down to its scientific content, theistic evolution is no different from atheistic evolution, accepting as it does only purposeless, naturalistic, material processes for the origin and development of life.” (“What every theologian should know about creation, evolution and design,” William A. Dembski, Ph.D., 1995)

[Back](#)



KANSAS

Science Education Standards

*Review and Revisions
Draft Two*

March 9, 2005

[Back](#)



Coalition for Science Position Paper on the State Science Standards



Excerpt: The Science Standards Writing Committee, appointed last year by the Kansas State Board of Education, has developed a superb set of standards for teaching science at all levels in public schools. But instead of accepting these standards, the Board of Education has subverted the process. They are now planning on spending tens of thousands of taxpayer dollars to stage a series of hearings intended to showcase a theology known as Intelligent Design creationism as a substitute for science. We support the adoption of the standards written by the science standards writing committee. We reject the show-trial hearings, whose purpose is to make it appear that Intelligent Design creationism and the well-established science of evolution are on equal footing.

We urge all Kansans to join us in adopting the following positions:

1. We request that the State Board of Education adopt the final draft of the standards offered later this spring by the writing committee, without revisions.

The Kansas Academy of Science
Kansas Citizens For Science
Kansas Families United for Public Education
The Mainstream Coalition
Kansas Association of Biology Teachers
Kansas Association of Teacher of Science
and hundreds of individual signers

Mike Everhart, president
Harry McDonald, president
John Martellaro, president
Caroline McKnight, director

[Back](#)



Kansas Citizens For Science Resolution Regarding the State Board Science Hearing Committee

WHEREAS, scientific merit is not established through public discourse and debate, but rather, internally, through a consensus of those with the specialized background necessary to make such judgment, and;

WHEREAS, it would not be fair to science to be found wanting by a self-admitted scientifically challenged jury with an anti-evolution bias,

NOW THEREFORE,

BE IT RESOLVED, that KCFS calls upon the Board of Education to dissolve the unneeded and ill-conceived Science Hearing Committee, or, if that fails to occur;

BE IT FURTHER RESOLVED, that KCFS calls on the entire science and science education community of Kansas to refuse to participate in the hearing proceedings. Science has its own validity and has made its position on these matters perfectly clear and unambiguous. ID and other forms of creationism aren't science. The specific proposals in the minority report have been rejected by the writing committee and by the science community at large. The science community should not put itself in the position of participating in a rigged hearing where non-scientists will appear to sit in judgment and find science lacking. Science should not give the anti-evolution members of the board the veneer of respectability when they take their predictable action. Let the board take responsibility for its actions without dignifying those actions with the appearance of academic rigor.

[Back](#)



AAAS Support of the boycott

After much consideration, AAAS respectfully declines to participate in this hearing out of concern that rather than contribute to science education, it will most likely serve to confuse the public about the nature of the scientific enterprise.

The consensus view of the scientific community on evolution is well-established and presented clearly in the AAAS's Benchmarks for Scientific Literacy and in the National Academy's National Science Education Standards. Although scientists may debate details of the mechanisms of evolution, there is no argument among scientists as to whether evolution is taking place.

We do not believe that any useful purpose would be served by our participation in this event.

Sincerely,

Alan I. Leshner
Chief Executive Officer

[Back](#)



An Open Letter to Members of the Board of Education

Excerpts: The theory of evolution is the foundation upon which modern biological research has been built. ...

An effort focused on casting doubt primarily on the theory of evolution will only serve to obscure high school student's understanding of biology. ... We also believe that holding hearings on the relative merits of Intelligent Design (ID) versus evolution will be similarly detrimental to the goals of the tax-payer financed Kansas Life Science Initiative. ...

[Intelligent Design] has not been tested scientifically, and cannot even be called an hypothesis, much less a theory, since it has made no predictions that have been scientifically tested. ...

In short, in our estimation, many of the current efforts to influence the writing committee's efforts will insert material that is not generally accepted by the scientific community and will cast doubt upon one of the most successful and useful theories in science. We believe these efforts will be detrimental to the understanding of science by Kansas high school students, with repercussions for all of our citizens. We urge you to accept without alteration the science standards as submitted by the writing committee, for the good of our students and our state.

Signed, forty five (45) faculty members of the departments of Molecular Biosciences and of Ecology and Evolutionary Biology at the University of Kansas, the Department of Biochemistry and Molecular Biology at the University of Kansas Medical Center, and the Department of Biological Sciences at Emporia State University.

[Back](#)



An Open Letter to Members of the Board of Education

Excerpts: We view the proposed changes in Kansas Science Standards (the minority report which is likely to be adopted by the State Board of Education) with dismay and disbelief.

The proposed changes attempt to define science as a religion, and to open the door to include intelligent design as a part of the curriculum. Science is not a religion, and religion is not science. Science and religion are simply different, but not exclusive, approaches to viewing and interpreting different aspects of the world. A person can be religious and be a scientist, but they cannot use religion to do science.

An overwhelming majority of biologists agree that evolution is the best explanation of the diversity of life on earth.

The flawed view of science that is being promoted will haunt our children as they prepare to attend college or seek jobs in medicine, agriculture, and bioscience and make decisions about their own children's health. Our state is prepared to invest millions of dollars to promote Kansas as a new epicenter of bioscience and biomedical research. How can we invite and attract bioscience corporations to our state and top scientists to our universities when we advocate an uneducated and unscientific approach to teaching the foundations of science and biotechnology? The proposed standards that are sympathetic to intelligent design are misguided, unscientific, will harm our children and our economy, and should not be adopted.

Signed by 19 members of the Division of Biology, Kansas State University

[Back](#)



God is a God of process

God acts through process in nature as well as in human history

Divine creation does not imply any necessary breaks in the continuity of cause-and-effect processes

Evolution is simply a scientific description of God's creative activity

[Back](#)



The Nature of Science

Science is a search for chains of natural cause-and-effect processes

Science is NOT a statement about the nature of ultimate reality. It is NOT based on a metaphysical naturalism

[Back](#)



Wisconsin Clergy letter

Concluding paragraph:

We the undersigned, Christian clergy from many different traditions, believe that the timeless truths of the Bible and the discoveries of modern science may comfortably coexist. We believe that the theory of evolution is a foundational scientific truth, one that has stood up to rigorous scrutiny and upon which much of human knowledge and achievement rest. To reject this truth or to treat it as 'one theory among others' is to deliberately embrace scientific ignorance and transmit such ignorance to our children.

We believe that among God's good gifts are human minds capable of critical thought and that the failure to fully employ this gift is a rejection of the will of our Creator. To argue that God's loving plan of salvation for humanity precludes the full employment of the God-given faculty of reason is to attempt to limit God, an act of hubris. We urge school board members to preserve the integrity of the science curriculum by affirming the teaching of the theory of evolution as a core component of human knowledge.

We ask that science remain science and that religion remain religion, two very different, but complementary, forms of truth.

[Back](#)



Minority report remarks on "naturalism."

"The core of the controversy between Proponents and Opponents [is that the] Opponents seek [to] narrow the scope of information to that which will not contradict the naturalistic claim that life is adequately explained by chance interactions of matter according to the laws of physics and chemistry.

It is reasonable to expect that this viewpoint discrimination will necessarily have the effect of causing students to reach [the] decision that they, and all other human beings, are merely natural occurrences, accidents of nature that lack intrinsic purpose.

An indoctrination in the philosophy of Naturalism would seem to offend Constitutional principles. [The Minority proposals will put] the State in a position of Constitutional neutrality rather than that of an advocate for Naturalism, a philosophy key to non-theistic belief systems.

The effect of this construct [seeking natural explanations] is to cause students to accept as true its unstated premise [of philosophical naturalism]. This can be reasonably expected to lead one to believe in the naturalistic philosophy that life and its diversity is the result of an unguided, purposeless natural process."

Draft 2 of the standards does not state, imply nor accept these conclusions. Science teachers throughout Kansas would be shocked and offended to hear that in their everyday teaching of science they were "indoctrinating" students to believe they were "accidents of nature that lack intrinsic purpose."

[Back](#)



There is NO Scientific Theory of Intelligent Design

Intelligent Design proponents offer nothing to the scientific community upon which a scientific program can be developed. They don't even have clearly defined definitions of critical terms that can be understood and applied by others. For example they have provided no objective basis upon which others can apply concepts such as irreducible complexity" or "specific complexity."

They focus on critiques of evolutionary theory that either attack strawman views of evolution, misrepresent current science, or are simply based on flawed reasoning. They also point to areas of frontier science in which the scientific community is yet to reach a consensus. None of this constitutes any challenge to the predictive and explanatory power of evolutionary theory.

In short, with regard to Intelligent Design, there is no "there" there. There simply is no theory of Intelligent Design or anything approaching it. Intelligent Design is not used in scientific research, even by its primary proponents. All Intelligent Design is a series of failed and rejected criticisms of evolutionary theory.

[Back](#)