

GIBBS LAW FIRM, P.A.

Attorneys and Counselors at Law

5666 SEMINOLE BOULEVARD, SUITE TWO
SEMINOLE, FLORIDA 33772

TELEPHONE: (727) 399-8300
FACSIMILE: (727) 398-3907

December 5, 2007

Ms. Linda Taylor
13451 McGregor Blvd. Suite 27
Fort Meyers, FL 33919
Via email: ltaylor@magllc.net

Dear Ms. Taylor:

Please accept for consideration by the Florida Board of Science Education our enclosed memorandum regarding the proposed changes to the science curriculum.

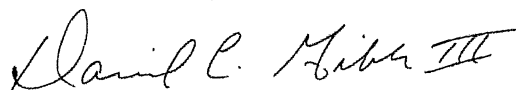
We are concerned about the scientific accuracy of the Florida standards and also about the potential some of these proposed terms might have for requiring only one particular belief system in Florida classrooms, which would be an unconstitutional violation of the Establishment Clause. The Establishment Clause "Lemon Test" does not permit the government to either promote or inhibit religion. Nor do courts permit the government to express hostility toward religion.

As is discussed in the enclosed memorandum, the terms being used in the proposed standards seem to imply a shift in classroom worldview away from the neutrality of a scientific perspective toward a "thumb on the scale" for one particular worldview or belief system, rather than for an objective treatment of classroom science.

Dr. Francis Grubbs is a longtime well-respected colleague and education expert, particularly in curriculum issues. We would respectfully ask the Board to give this memorandum considerable weight in its discussions of this matter.

Sincerely,

Gibbs Law Firm, P.A.



David C. Gibbs III
Admitted in FL, CO, TX, MN, ND, OH & DC

Cc: Sen. David Webster; Rep. Ronda Storms; Mr. Terry Kemple

MEMORANDUM

TO: Florida State Board of Education
FROM: Dr. Francis C. Grubbs, PhD, and Dr. David Gibbs III, Gibbs Law Firm
DATE: December 5, 2007
RE: Proposed revisions to Florida's science standards

Dr. Francis Grubbs is a lifetime educator with considerable experience in curriculum design and development. Dr. Gibbs is a Florida attorney, specializing in religious liberty and constitutional law. We are submitting this Memorandum in order to address our concerns regarding the proposed revisions to Florida's science standards.

First, we want to commend the State of Florida for taking the deliberate steps necessary to upgrade its academic standards, and especially to address the science standards. There are positive additions being considered in several of the Benchmarks, which we will identify; but our central focus in this Memorandum will be the Life Science Body of Knowledge.

Please be aware that we are not writing to oppose the inclusion of evolution within the field of science study in Florida schools. Courts have clearly indicated that this inclusion is both legitimate and necessary. We are primarily concerned with and will address our review of the wording of several of the Benchmarks, which seems to demonstrate evidence that the committee may have become monopolized by Fordham and other lobby-pressure groups. This seems to have resulted in the insertion of language into the Benchmarks that would tend to make science something less than the quest for scientific honesty and intellectual integrity that it should be in Florida schools. We are concerned that the underlying motive driving these pressure groups might be to inject a hostility towards religion into objective science, something that clearly has no place in Florida's classrooms---either scientifically or legally.

The Nature of Science

The Benchmarks dealing with the Nature of Science are particularly well done and they should set the agenda and procedure for careful science studies in all of the other "Big Ideas." We would encourage the Board to seriously consider placing this Benchmark first in both seventh and eighth grade levels as it is in grades nine through twelve. This would provide an understanding of what science is, as well as recognizing its limitations as is well stated in Benchmark SC. 912.N.1.1. : *"The learner will be able to identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the requirements of science.)"*

Other excellent statements within this category define Scientific Inquiry based on empirical methods and processes; the role of scientific argumentation; the definition of a scientific theory; and how the learner will recognize that the strength or usefulness of a

scientific claim is established through scientific argumentation, and the active consideration of alternative scientific explanations to explain all the data presented. If these are taught adequately and honestly, we believe that Florida could be poised to become a leader in the education of future scientists.

The Big Idea of Evolution and Diversity

Our focus now shifts to The Big Idea of Evolution and Diversity in both the seventh grade level and nine through twelve grade levels. The term “evolution” is not specifically defined in any of these levels. Although this term is a scientific theory explaining the process by which organisms change to adapt to life in a certain kind of environment, the same term has also been used as an all inclusive word for the origin of life, for change of one specie to another specie, and for mutational changes.

Obscuring these categories of change, and blurring the category of specie is what incorrectly gave rise to Darwin’s evolutionary tree by which different naturalists classified species according to external characteristics, and disagreed about whether it was a specie or variety. However, with the scientific advances in genetics and DNA these groupings can now be better clarified. Hence, scientific honesty must define the three categories addressed in the subject of evolution and differentiate between each of these on the basis of evidential substantiation.

It is also interesting that the term “theory of evolution” is not introduced in any benchmark even though a scientific theory is defined (Benchmark SC.912.N.3.2.) *as the culmination of many scientific investigations drawing together all the current evidence, thus, it represents the most powerful explanations scientists have to offer.* This omission seems both disingenuous and demonstrative of an underlying unscientific agenda since it either admits that definitive evidence does not exist, or else that Evolution is a verified fact no matter how it is defined. Neither of these results is either scientific or honest.

The Wording of Several Benchmarks

Examining the wording of several of the proposed benchmarks seems to demonstrate an inherent bias in the language of the statements.

Benchmark SC.7.E.2.1: *Recognize and describe that fossil evidence is consistent with the idea that human beings evolved from earlier species.* This statement suggests that evolution from earlier species is evidentially absolute. It would be more scientific to change this language in a way that would at least provide an alternate understanding that this evidence is not absolute. One suggestion would be: *Recognize and describe how consistent fossil evidence seems to be with the hypothesis that humans beings evolved from earlier species.*

Benchmark SC.7.E.2.2: *Recognize and explain that small genetic differences between parents and offspring can accumulate in successive generations so that descendants are very different from their ancestors, and that environmental conditions affect the survival of individual organisms.* This wording again suggests an absolutely predictable outcome which, from a scientific perspective, is not that certain. This problem can be overcome with a few minor changes in wording. Strike the words “are very” and insert the words “may be”, and insert the word “may” between “conditions” and “affect.” That would reflect accurate science and would then read: *Recognize and explain that small genetic differences between parents and offspring can accumulate in successive generations so that descendants may be different from their ancestors, and that environmental conditions may affect the survival of individual organisms.*

Benchmark SC.912.L.2.1: *Explain how evolution is demonstrated by the fossil record, extinction, comparative anatomy, comparative embryology, biogeography, molecular biology (crosscuts with earth/space), and observed evolutionary change.* Once again this Benchmark demonstrates an unscientific bias that evolution is a fact that is totally supported by the listed items. It would more accurately represent a scientific viewpoint to redraft this Benchmark to read: *To be able to explain what evidence the fossil record, extinction, comparative anatomy, comparative embryology, biogeography, molecular biology (crosscuts with earth/space), and observed evolutionary change provide to support the theory of evolution and which division of evolution it supports.*

Benchmark SC.912.L.2.7: *Express scientific explanations of the origin of life on Earth.* While we have no major opposition to this Benchmark, we would suggest a rephrasing more in keeping with the Benchmarks under the category of Scientific Inquiry and with a call for scientific honesty and integrity Use this wording instead: *Express scientific hypotheses for the origin of life on Earth, and the limitations of science in constructing a theory of origin.*

Benchmark SC.912.L.2.9: *Identify basic trends in hominid evolution from early ancestors six million years ago to modern humans.* The language of this Benchmark, once again, overstates the evidence and implies there is sufficient direct fossil evidence for hominid evolution to identify trends. Dr. Grubbs has completed a review of about 40 recently discovered fossils classified as hominid. The debates among paleoanthropologists over issues of classification certainly does obfuscate the identification of any trends. We would suggest a rewording that would provide the same learning proficiencies for the learner, but devoid of the inherent unscientific bias. *Identify the types of hominid fossil evidence from the estimated six million years of hominid existence, and describe the types of evolutionary changes from those classified as early hominids to modern man, as suggested by this evidence.*

Evolution and Diversity

The final category of the Proposed Science Standards that we suggest should be reconsidered is the opening paragraph in the Grades 9-12 Standards entitled *Evolution and Diversity*: *A. Evolution is the fundamental concept underlying all of biology and is supported by multiple forms of scientific evidence. B. Organisms are classified based on their evolutionary history. C. Natural selection is the primary mechanism leading to evolutionary change.*

This statement declares matter-of-factly that Evolution is the only basis of an interpretive system for understanding all of life-science. This unscientific conclusory statement, devoid of underlying evidence, moves Florida's science standards outside the realm of traditional science and enters, instead, into the discipline of philosophy as the construct for defining a *worldview*. A *worldview* addresses, not only the field of science, but the philosophical purview of how to identify the four components of reality. The problem here is that Florida's science standards now force upon students only one of several potential interpretive worldview systems without providing any philosophical instruction as to how students may evaluate and distinguish between the various worldviews that inform and identify the four components of reality---god, life, matter and time.

The proposed science standards now leave the field of science and give students only one unexplained construct for defining a worldview. Forcing the student to see all of life philosophically from one undefined and unexplained philosophical worldview---a worldview that affirms there is no god; that matter is either eternal or has spontaneously appeared from non-matter; that life has spontaneously generated from non-living matter; and that time is but a segment of unmeasurable duration. All of these assumptions are based on a philosophical belief system and fall outside the parameters of science as addressed by Benchmark SC.8.N.5.4 and Benchmark SC.912.N.1.2. Making Evolution the fundamental concept by which all life-science is interpreted or understood limits the scope of scientific inquiry and demands that all biological inquiry be predicated on the evolutionary hypothesis. Making this gigantic jump moves the evolutionary hypothesis from the realm of science into a philosophical faith-based belief system. It has fallen into the same trap of which science has accused religion. It posits its entire interpretive rationale on something which is unobservable and untested. In fact, it could easily be argued that the science curriculum has now moved away from objective and neutral inquiry and has moved into the realm of promoting one particular religious (or, more specifically, non religious) viewpoint or belief system. Since the Establishment Clause of the First Amendment to the United States Constitution does not permit public schools to inculcate students with any one particular belief system or religion (or non religion), if this standard is employed in Florida schools, as is now being proposed, it could face legal challenges for violating the separation of church and state. Public schools are legally required to be neutral regarding belief systems and religion as opposed to non religion.

We appreciate your attention to this lengthy critique. Again, we want to emphasize that we are not objecting to the study of evolution in these grade levels. We are merely

pointing out that the study of science in public schools must be a study of hypotheses, theories and evidence, and possible limitations and alternatives. We cannot morph science education into a form of unconstitutional religious (or non religious) indoctrination. If we are truly to educate scientists to function adequately in our modern world, our Florida schools must build the foundations within the minds of our middle and secondary learners for inquiring minds, honest skepticism, the ability to research evidence, and the freedom to explore and posit alternative conclusions. Anything that limits these learning outcomes moves our state's schools from education toward an unconstitutional indoctrination.