SECOND REGULAR SESSION

HOUSE BILL NO. 1227

96TH GENERAL ASSEMBLY

INTRODUCED BY REPRESENTATIVES BRATTIN (Sponsor), McCAHERTY, DAVIS, KOENIG, ALLEN AND POLLOCK (Co-sponsors).

4747L.01I D. ADAM CRUMBLISS, Chief Clerk

AN ACT

To amend chapters 170 and 174, RSMo, by adding thereto two new sections relating to standard science instruction.

Be it enacted by the General Assembly of the state of Missouri, as follows:

Section A. Chapters 170 and 174, RSMo, are amended by adding thereto two new sections, to be known as sections 170.018 and 174.890, to read as follows:

170.018. 1. This section shall be known as, and may be cited as, the "Missouri Standard Science Act".

2. As used in this section, the following terms mean:

(1) "Analogous naturalistic process", a verifiable process which is either a present-day naturally occurring process similar to a past naturalistic process or the human-directed duplication of a process similar to a past naturalistic process. The verifiable process uses similar natural materials, mechanisms, and conditions as the past naturalistic process and produces an equivalent end result;

(2) "Biological evolution", a theory of the origin of life and its ascent by naturalistic means. The first simple life was developed from basic elements and simple molecules through the mechanisms of random combinations, naturally occurring molecular structures, other naturalistic means, and millions of years. From the first simple life, all subsequent species developed through the mechanisms of random variation, mutation, natural selection, adaptation, segregation, other naturalistic means, and millions of years. The theory is illustrated by the evolutionary phylogenic tree. Theory philosophically

EXPLANATION — Matter enclosed in bold-faced brackets **[**thus**]** in the above bill is not enacted and is intended to be omitted from the law. Matter in **bold-face** type in the above bill is proposed language.

demands only naturalistic causes and denies the operation of any intelligence, supernatural event, God or theistic figure in the initial or subsequent development of life;

(3) "Biological intelligent design", a hypothesis that the complex form and function observed in biological structures are the result of intelligence and, by inference, that the origin of biological life and the diversity of all original species on earth are the result of intelligence. Since the inception of each original species, genetic material has been lost, inherited, exchanged, mutated, and recombined to result in limited variation. Naturalistic mechanisms do not provide a means for making life from simple molecules or making sufficient new genetic material to cause ascent from microscopic organisms to large life forms. The hypothesis does not address the time or sequence of life's appearance on earth, time or formation of the fossil record, and time or method of species extinction. The hypothesis does not require the identity of intelligence responsible for earth's biology but requires any proposed identity of that intelligence to be verifiable by present-day observation or experimentation. Concepts inherent within the hypothesis include:

(a) The origin of life on earth is inferred to be the result of intelligence directed design and construction. There are no plausible mechanisms or present-day experiments to prove the naturalistic origin of the first independent living organism;

(b) All original species on earth are inferred to be the result of intelligence directed design and construction. There are no significant mechanisms or present-day experiments to prove the naturalistic development of earth's species from microscopic organisms;

(c) Complex forms in proteins, enzymes, DNA, and other biological structures demonstrated by their constituent molecules in regard to size, shape, quantity, orientation, sequence, chirality, and integration imply intelligent design was necessary for the first life on earth. Intelligence is capable of designing complex form;

(d) Complex functions demonstrated by growth, reproduction, repair, food metabolization, waste disposal, stimuli response, and autonomous mobility in microscopic organisms imply intelligent design was necessary for the first life on earth. Intelligence is capable of designing complex function;

(e) Within the history of human experience, all exhibits of recurring discrete symbols from a set of symbols arranged in a specific sequence which store information and can be read by human intelligence, is itself the result of intelligence. DNA contains stored information for the assembling of proteins and enzymes which can be read by humans and is the result of intelligence. The recurring discrete symbols sequenced within DNA which store information are the molecules adenine, guanine, cytosine, and thymine;

(f) Intelligence-directed design and construction of all original species at inception without an accompanying genetic burden is inferred rather than random mutational

genetic change as a constructive mechanism. Random mutational genetic change results in an increasing genetic burden and species degradation rather than species ascent;

(g) Intelligence-directed action is necessary to exceed the limits of natural species change, which is a combination of autogenous species change and environmental effected species change. Multi-generation breeding experiments illustrate the limits of natural species change and its inadequacy for developing required genetic information found in dissimilar species;

(h) The irreducible complexity of certain biological systems implies a completed design and construction at inception rather than step-by-step development, as indicated by the structures observed for sight, hearing, smell, balance, blood coagulation, digestion, and hormone control;

(i) The lack of significant transitional forms between diverse species existing today and in the fossil record implies all original species were completed at inception rather than by a step-by-step development from other species. A lack of transitional forms is illustrated by the appearance of large complex life forms in the Cambrian fossil record without any significant previous fossils;

(j) Common designs and features evident in different species imply the intelligent reuse of proven designs analogous to the reuse of proven designs by human designers;

(k) The lack of significant present-day observable changes in species due to random variation, mutation, natural selection, adaptation, segregation, or other naturalistic mechanisms implies intelligence as the cause for all original species;

(4) "Destiny", the events and processes that define the future of the universe, galaxies, stars, our solar system, earth, plant life, animal life, and the human race and which may be founded upon faith-based philosophical beliefs;

(5) "Empirical data", information obtained from observation or experimentation about the physical universe. The components of observed information include the identity of the observed object, date of observation, location of observation, means of observation, observational tools, observing personnel, and recorded observations. The components of experimental information include the methodology of experimentation, date of experiment, location of experiment, experimental apparatus, experimenting personnel, and recorded observations. Empirical data is not speculative, theoretical, hypothetical, inferred, or extrapolated and of which conjecture;

(6) "Equal treatment", the approximate equal teaching of each specified viewpoint for a single course of instruction in course textbooks as follows:

(a) Course textbooks contain approximately an equal number of pages of relevant material teaching each viewpoint. Textbook materials include text, pictures, illustrations,

graphs, tables, questions, discussion items, student exercises, teacher support material and other material supplied with the textbook, with freedom allowed the textbook publishers to arrange, substitute, or size material to provide an approximately equal teaching of each viewpoint for a specific textbook;

(b) In the absence of course textbooks which provide equal treatment, written interim material may provide alternate viewpoints, with interim textbook material developed pursuant to subsection 6 of this section as a recommended source;

(7) "Hypothesis", a scientific theory reflecting a minority of scientific opinion which may lack acceptance because it is a new idea, contains faulty logic, lacks supporting data, has significant amounts of conflicting data, or is philosophically unpopular. One person may develop and propose a hypothesis;

(8) "Origin", the events and processes previous to written history that define the beginning, development, and record of the universe, galaxies, stars, our solar system, earth, earth geology, earth geography, fossils, species extinction, plant life, animal life, and the human race, and which may be founded upon faith-based philosophical beliefs;

(9) "Scientific theory", an inferred explanation of incompletely understood phenomena about the physical universe based on limited knowledge, whose components are data, logic, and faith-based philosophy. The inferred explanation may be proven, mostly proven, partially proven, unproven or false and may be based on data which is supportive, inconsistent, conflicting, incomplete, or inaccurate. The inferred explanation may be described as a scientific theoretical model;

(10) "Scientific law", a statement describing specific phenomena about the physical universe which has been verified by observation or experimentation and has no exceptions of verified empirical data. The statement may be described by formula;

(11) "Standard science", knowledge disclosed in a truthful and objective manner and the physical universe without any preconceived philosophical demands concerning origin or destiny. Knowledge is based upon verified empirical data obtained through observation and experimentation and serves as the factual basis for formulae, events, processes, principles, and laws and may be a component of theory, hypothesis, conjecture and extrapolation. Knowledge growth as a result of human endeavor serves as the foundation for the continuous reevaluation of theory, hypothesis, conjecture, and extrapolation to determine their correctness based on supporting or conflicting verified empirical data.

3. All science taught in Missouri public elementary and secondary schools, including material concerning physics, chemistry, biology, health, physiology, genetics, astronomy, cosmology, geology, paleontology, anthropology, ecology, climatology, or other

science topics shall be standard science. All standard science course materials and instruction shall meet the following criteria:

(1) If empirical data is taught, only such data which has been verified or is currently capable of being verified by observation or experimentation shall be taught. Data with the appearance of empirical data which has never been verified and is currently incapable of being verified shall be identified as nonverifiable when taught orally or in writing;

(2) If scientific law is taught, written textbooks statements identified as scientific law shall have no known exceptions of verified empirical data;

(3) If scientific theory is taught, the theory shall be identified as theory when taught orally or in writing. Empirical data and conjecture may be presented to support taught theory where considered instructive. As used in this subsection, the term "theory" shall mean theory or hypothesis;

(a) If a scientific theory concerning origin or destiny is taught without the teaching of opposing scientific theory, the taught theory may be criticized by the teaching of conflicting empirical data where considered instructive;

(b) If scientific theory concerning biological origin is taught in a course of study, biological evolution and biological intelligent design shall be taught. Other scientific theory or theories of origin may be taught. If biological intelligent design is taught, any proposed identity of the intelligence responsible for earth's biology shall be verifiable by present-day observation or experimentation and teachers shall not question, survey, or otherwise influence student belief in a nonverifiable identity within a science course;

(c) If scientific theory concerning biological origin is taught in a textbook, the textbook shall give equal treatment to biological evolution and biological intelligent design. Other scientific theory or theories of origin may be taught;

(4) If an event previous to written history is taught, the event shall be supported by physical evidence. Physical evidence and data concerning the event may be taught where considered instructive. Conjecture concerning an event previous to written history as to the occurrence of the event, cause of the event, date of the event, length of time for the event to occur, subsequent effects of the event, or other speculative details shall be taught as theory or hypothesis as specified in subdivision (3) of this subsection;

(5) If a naturalistic process previous to written history is taught, the naturalistic process shall be duplicated by an analogous naturalistic process. Details of the analogous naturalistic process may be taught where considered instructive. Conjecture concerning a naturalistic process previous to written history as to the occurrence of the process, cause of the process, date of the process, length of time for the process to occur, process

conditions, process mechanisms, process materials, or other speculative details shall be taught as theory or hypothesis as specified in subdivision (3) of this subsection;

(6) If a scientific theory or hypothesis proven to be false is taught for historical, illustrative, or other reasons, the theory or hypothesis shall be identified as false when taught orally or in writing.

4. Textbooks owned by public schools on the date this section becomes law are exempted from the requirements of this section. New textbooks purchased for public schools after the date this section becomes law shall meet the requirements of this section as specified in subsection 7 of this section.

5. The department of education shall negotiate with textbook publishers to make available textbooks suitable for use in Missouri public elementary and secondary schools which meet the requirements of this section at the earliest practical date and add those textbooks to the prescribed list of textbooks in subsection 7 of this section. Any publisher whose textbook is used by a Missouri public school on the date this section becomes law and certifies to the commission of education that their textbook or a newer version meets the requirements of this section shall have that textbook added to the prescribed list in subsection 7 of this section.

6. A temporary committee shall be established and serve without compensation to develop supplemental textbook material for interim use by public schools for the teaching of biological intelligent design within two years after this section becomes law. The committee shall consist of nine individuals who are knowledgeable of science and intelligent design and reside in Missouri. Each member of the state board of education and the commissioner of education shall appoint one person to the committee. The supplemental material shall be based on subdivision (3) of subsection 2 of this section and its use by schools shall be optional. Interim supplemental material shall be accessible for copying on the department of elementary and secondary education internet website without cost or restriction.

7. The state commissioner of education shall maintain a list of prescribed textbooks which meet the requirements of this section. The prescribed list shall give the date the textbook was added to the list, textbook title, publisher's name, grade level or levels, course of instruction and other pertinent information, and the prescribed list shall be accessible on the department of elementary and secondary education internet website in a conspicuous manner. When the first textbook for a specific course of instruction is added to the prescribed list, then two years following the add date and forward, all new textbooks purchased by the public schools for that specific course of instruction and grade level or levels, whether on the prescribed list or not, shall meet the requirements of this section.

8. The state commissioner of education shall ensure that any assessment or competency testing of elementary or secondary school pupils for academic performance used and controlled by the state conforms with this section concerning science material within two years after this section becomes law and such test material shall give equal treatment to theories of biological origin in subdivision (3) of subsection 3 of this section.

174.890. 1. Notwithstanding any other law, any introductory science course taught at any public institution of higher education in this state, including material concerning physics, chemistry, biology, health, physiology, genetics, astronomy, cosmology, geology, paleontology, anthropology, ecology, climatology, or other science topics, shall be standard science. All standard science course materials and instruction shall meet the following criteria:

(1) If empirical data is taught, only such data which has been verified or is currently capable of being verified by observation or experimentation shall be taught. Data with the appearance of empirical data which has never been verified and is currently incapable of being verified shall be identified as nonverifiable when taught orally or in writing;

(2) If scientific law is taught, written textbooks statements identified as scientific law shall have no known exceptions of verified empirical data;

(3) If scientific theory is taught, the theory shall be identified as theory when taught orally or in writing. Empirical data and conjecture may be presented to support taught theory where considered instructive. As used in this subsection, the term "theory" shall mean theory or hypothesis;

(a) If a scientific theory concerning origin or destiny is taught without the teaching of opposing scientific theory, the taught theory may be criticized by the teaching of conflicting empirical data where considered instructive;

(b) If scientific theory concerning biological origin is taught in a course of study, biological evolution and biological intelligent design shall be taught. Other scientific theory or theories of origin may be taught. If biological intelligent design is taught, any proposed identity of the intelligence responsible for earth's biology shall be verifiable by present-day observation or experimentation and teachers shall not question, survey, or otherwise influence student belief in a nonverifiable identity within a science course;

(c) If scientific theory concerning biological origin is taught in a textbook, the textbook shall give equal treatment to biological evolution and biological intelligent design. Other scientific theory or theories of origin may be taught;

(4) If an event previous to written history is taught, the event shall be supported by physical evidence. Physical evidence and data concerning the event may be taught where

considered instructive. Conjecture concerning an event previous to written history as to the occurrence of the event, cause of the event, date of the event, length of time for the event to occur, subsequent effects of the event, or other speculative details shall be taught as theory or hypothesis as specified in subdivision (3) of this subsection;

(5) If a naturalistic process previous to written history is taught, the naturalistic process shall be duplicated by an analogous naturalistic process. Details of the analogous naturalistic process may be taught where considered instructive. Conjecture concerning a naturalistic process previous to written history as to the occurrence of the process, cause of the process, date of the process, length of time for the process to occur, process conditions, process mechanisms, process materials, or other speculative details shall be taught as theory or hypothesis as specified in subdivision (3) of this subsection;

(6) If a scientific theory or hypothesis proven to be false is taught for historical, illustrative, or other reasons, the theory or hypothesis shall be identified as false when taught orally or in writing.

2. The definitions included in subsection 1 of section 170.018 shall apply to terms used in this section.

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