



May 28, 2018

Carol Lippert, Associate Superintendent
High Academic Standards for Students Division
Arizona Department of Education
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E-mail: Carol.Lippert@azed.gov

CC: Diane Douglas, Superintendent of Public Instruction

Re: Comments on Draft Arizona K-12 Science Standards

AMERICAN CIVIL
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Dear Associate Superintendent Lippert:

We write to object to proposed language in the draft K-12 science standards pertaining to evolution, natural selection, and related scientific matters. Specifically, the changes proposed by Superintendent Diane Douglas and her staff during the Arizona Department of Education's (ADE) internal review process appear to be nothing more than an effort to create uncertainty regarding evolution's validity as a scientific concept. If approved, these alterations would cause confusion for teachers and students, weaken Arizona's ability to provide high-quality science education and career preparedness for its students, and raise serious constitutional concerns under the Establishment Clause of the First Amendment.

As the Arizona Science Teachers Association has explained, "evolution is a major unifying concept in science and should be emphasized in K-12 science education frameworks and curricula."¹ Sound science instruction in evolution is vital to ensuring "a level of scientific literacy needed to be well-informed citizens and prepared for college and STEM careers."² The proposed revisions, however, repeatedly seek to diminish the scientific validity of evolution and related concepts. For example, in some places, the changes would completely eliminate the term "evolution," replacing it with "biological diversity" or "change in genetic composition of a population over successive generations." There is no scientific or educational justification for these proposed changes. Rather they are a transparent attempt to open the door for intelligent-design

¹ Educational and Position Statements, Arizona Science Teachers Association, <https://www.azsta.org/about-asta/educational-and-position-statements/>. This position is consistent with the National Science Teachers Association position and supported by the National Academies, the American Association for the Advancement of Science (AAAS), and others. NSTA Position Statement: The Teaching of Evolution, National Science Teachers Association, <http://www.nsta.org/about/positions/evolution.aspx>.

² See Educational and Position Statements, *supra* n.1.

advocates and others to inject non-scientific, religious explanations for these phenomena into public-school curricula.³

The ADE's internal review revisions also would add language stating that evolution "seeks to make clear" certain phenomena and that evolution "may" result from natural selection. Moreover, the revisions would refer to evolution as a "theory" without clarifying that it is a tested scientific theory, not a guess or suggestion as most people use the word in everyday conversation.⁴ As a former long-time ADE employee who refused to make these changes recognized: "It sends the message that a theory is a guess as opposed to understanding that a theory is the highest level of explanation based on evidence that there is in science."⁵ In sum, the proposed changes would engender the false implication that there is controversy over evolution as a scientific concept. In fact, there is no controversy among members of the legitimate scientific community.

Finally, the proposed revisions to the high-school standards would remove a reference to the Big Bang, replacing it with "theories related to the scale and expansion of the universe." The proposed standards also require students to "critique" these "theories." Again, there is no scientific or educational justification for these changes. Like evolution, the Big Bang is universally accepted by the legitimate scientific community. And the proposed standards already encouraged students to "analyze" and "interpret" what they learn. Adding the word "critique" is a creationist dog whistle: Unable to legally promote their beliefs in public schools, advocates of intelligent design and creationism have, in recent years, begun pushing for "critical thinking" to be added to science standards—code language that sows uncertainty and confusion among students and emboldens some educators to present their personal religious beliefs about these matters in class.⁶

³ See, e.g., Science, Evolution, and Intelligent Design, Union of Concerned Scientists, https://www.ucsusa.org/scientific_integrity/what_you_can_do/science-evolution-and.html (referring to efforts to promote teaching "intelligent design and other non science-based views of biological diversity").

⁴ See, e.g., *Kitzmiller v. Dover Area Sch. Dist.*, 400 F. Supp. 2d 707, 765 (M.D. Pa. 2005) ("Repeatedly in this trial, Plaintiffs' scientific experts testified that the theory of evolution represents good science [and] is overwhelmingly accepted by the scientific community . . . [T]he fact that a scientific theory cannot yet render an explanation on every point should not be used as a pretext to thrust an untestable alternative hypothesis grounded in religion into the science classroom or to misrepresent well-established scientific propositions.").

⁵ Carissa Planalp, *Former Education Staffer Quits After Being Told to Change 'Evolution' in Science Standards Draft*, Arizona's Family, May 23, 2018 (updated), <http://www.azfamily.com/story/38253258/education-staffer-says-she-resigned-when-asked-to-make-evolution-changes>.

⁶ See, e.g., *Freiler v. Tangipahoa Parish Bd. of Educ.*, 185 F.3d 337, 344-45 (5th Cir. 1999) (overturning requirement that teachers read classroom disclaimer questioning validity of evolution and promoting creationism because the "contested disclaimer does not further . . . freedom of belief or critical thinking by students. . . [but rather] furthers a contrary purpose, namely the protection and maintenance of a particular religious viewpoint"); *Freiler v. Tangipahoa Parish Bd. of Educ.*, 975 F. Supp. 819, 829 (E.D. La. 1997) ("[T]his Court cannot glean any secular purpose to this disclaimer. While the School Board intelligently suggests that the purpose of the disclaimer is to urge students to exercise their critical thinking skills, there

Courts have repeatedly recognized that governmental efforts to undermine public-school instruction in evolution and science education in service of bolstering creationism, intelligent design, and other religious beliefs violate the Establishment Clause.⁷ Superintendent Douglas and her staff’s proposed revisions appear to be aimed at doing just that. Like previous campaigns by anti-evolution advocates purporting to promote teachers’ “academic freedom,” or students’ “critical thinking” about the “strengths and weaknesses” of evolution, the proposed changes seek to undercut evolution education—all in an effort to lend credence to religious doctrine. The ADE’s assent to this moving forward would be a disservice to well-intentioned teachers and schools, as well as students who want to pursue STEM careers. It also would be an affront to religious liberty. Matters of faith are personal. The government must refrain from promoting religious beliefs, particularly in the public-school setting: A child’s religious upbringing, if any, is a task best left to a student’s family and religious community.

We are well aware of Superintendent Douglas’s comments indicating her desire for public-school science teachers to present intelligent design alongside evolution in public schools.⁸ The U.S. Constitution prohibits this. Indeed, any effort to weaken state science standards—especially when it comes to core scientific concepts—would not only raise constitutional concerns, but it would also be imprudent. Arizona’s students will be left unprepared for advanced college coursework in scientific areas, and at a disadvantage in pursuing increasingly desirable STEM fields.

can be little doubt that students already had that right and are so urged in every class.”), *aff’d*, 185 F.3d 337 (5th Cir. 1999).

⁷ See, e.g., *Edwards v. Aguillard*, 482 U.S. 578, 586 (1987) (striking down requirement to teach creationism if evolution is taught in public schools and holding that the law “was not designed to further” the State’s purported goal of “protect[ing] academic freedom”); *Epperson v. Arkansas*, 393 U.S. 97, 107 (1968) (holding unconstitutional state law prohibiting the teaching of evolution in public schools as “there can be no doubt that Arkansas has sought to prevent its teachers from discussing the theory of evolution because it is contrary to the belief of some that the Book of Genesis must be the exclusive source of doctrine as to the origin of man”); *Freiler*, 185 F.3d at 344-45; *Freiler*, 975 F. Supp. at 829; *Selman v. Cobb Cty. Sch. Dist.*, 390 F. Supp. 2d 1286, 1306 (N.D. Ga. 2005) (striking down board policy requiring placement of sticker disclaiming evolution as theory, not fact, in all science textbooks because the sticker impermissibly “sends a message to those who oppose evolution for religious reasons that they are favored members of the political community, . . . [and] a message to those who believe in evolution that they are political outsiders”), *vacated and remanded on grounds of incomplete trial record*, 449 F.3d 1320 (11th Cir. 2006); *Kitzmiller*, 400 F. Supp. 2d, at 765-66 (striking down school board policy promoting the teaching of intelligent design in biology class); *McLean v. Ark. Bd. of Educ.*, 529 F. Supp. 1255, 1274 (E.D. Ark. 1982) (enjoining statute authorizing teaching of “creation-science” in public schools and holding that “[n]o group, no matter how large or small, may use the organs of government, of which the public schools are the most conspicuous and influential, to foist its religious beliefs on others”).


⁸ Lauren Castle, *Evolution Wording Removed from Draft of Arizona School Standards*, Arizona Republic, May 22, 2018, <https://www.azcentral.com/story/news/local/arizona-education/2018/05/22/arizona-draft-school-science-standards-removes-evolution-diane-douglas-intelligent-design/628941002/>.

For the reasons discussed above, we urge you to reject the proposed revisions regarding evolution to the K-12 science standards.

Sincerely,

A handwritten signature in blue ink that reads "Kathleen Brody".

Kathleen E. Brody
Legal Director
ACLU of Arizona

A handwritten signature in black ink that reads "Heather L. Weaver".

Heather L. Weaver
Senior Staff Attorney
ACLU Program on Freedom of Religion and Belief

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