Federation of American Societies for Experimental Biology

----Quality Life Through Research----

FASEB Opposes Using Science Classes to Teach Intelligent Design, Creationism, and other Non-Scientific Beliefs

Representing 22 professional societies and 84,000 scientists in disciplines that range from single molecules to public health, the Federation of American Societies for Experimental Biology (FASEB) affirms that instruction in science is an essential component of education. Science education has become increasingly important in driving innovation and discovery, and in enabling citizens to make informed decisions and to compete in the 21st century workplace. For these reasons, it is critical to preserve the integrity of science education by opposing the mandatory teaching in science classes of creationism, intelligent design, and other concepts not based on sound scientific principles.

Proponents for non-scientific accounts of the development of life, including creationism and intelligent design, contend that evolution alone should not be taught in science classes. Arguing that evolution is "just a theory," rather than a fact, they insist that intelligent design should be offered as an alternative to evolution or given "equal time", and that schools should "teach the controversy" surrounding evolutionary theory.

FASEB does not support these views. We also affirm that these positions seriously undermine science education.

In science, a theory is a coherent explanation of natural phenomena based on direct observation or experimentation. Theories are logical, predictive, and testable. They are open to criticism and when shown to be false, they are modified or dismissed. Using this definition, evolution is categorized with other scientific theories such as gravity or atomic theory, which, like evolution, are universally accepted among scientists.

Evolution is among the most thoroughly tested theories in the biological sciences. It is supported by volumes of scientific evidence in numerous fields, including genetics, biochemistry, developmental biology, comparative anatomy, immunology, geology, and paleontology. Moreover, evolution lays the foundation for much of what we know about genetics, immunology, antibiotic resistance, human origins, and the adaptation of species to a changing environment. Removing evolution from the classroom, or misrepresenting evolution as a flawed theory, deprives students of one of the most important

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tenets of science and the basis of our understanding of biology and medicine, including pandemic influenza and AIDS.

In contrast to evolution, intelligent design and creationism are not science because they fail to meet the essential and necessary requirements: they are not based on direct observation or experimentation nor do they generate testable predictions. Therefore, offering these beliefs as alternatives to evolution or giving them equal time in science classes completely misrepresents the nature of science.

Before information is presented as fact in science textbooks, it is tested, evaluated by experts, published in scientific journals, and considered credible by the broader scientific community. Even alternative ideas should have an evidentiary basis and garner at least limited support by scientists before they are incorporated into textbooks. Allowing intelligent design and creationism to circumvent this rigorous process of scientific scrutiny paves the way for other, poorly studied, pseudoscientific ideas to enter science curricula.

Proposals that call for "teaching the controversy" or singling out evolution for criticism are equally objectionable. While there may be some disagreement about the details of evolution, it is not a controversial theory among scientists. Rather, there is overwhelming scientific consensus that evolution is a valid explanation for the development of species. Although students should be encouraged to think critically about all ideas, introducing false controversy into science classes will ultimately impair science education.

FASEB considers evolution a critical topic in science education and strongly supports the teaching of evolution.

FASEB opposes mandating the introduction of creationism, intelligent design, and other non-scientific concepts into the curricula of science.

FASEB opposes introducing false controversies regarding evolution or other accepted scientific theories into the curricula of science.

FASEB calls upon the scientific community and American citizens to defend science education by opposing initiatives to teach intelligent design, creationism, and other non-scientific beliefs in science class.

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