

**Proposed resolution to 4S council**  
**Statement on teaching evolution in public schools**

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Motion to 4S Council: Approve the following resolution, which is in the form of a public statement, regarding teaching evolution in public schools:

**As scholars studying science and its cultural contexts, the work of 4S members has often provided analyses of scientific authority in both professional and public life. A neutral stance is often crucial to our ability to achieve a symmetric analysis, one which privileges neither social nor natural causes in the explanation of scientific failure or success. But there are cases in which the analytic gains offered by neutrality are outweighed by the dangers of public misinformation or social harm. “Intelligent design” warrants such an exception on both counts.**

**Intelligent design and similar forms of “creation science” misrepresent the status of evolution in the scientific community. Its advocates claim that the phrase “theory of evolution” implies a largely untested hypothesis, and that the mere presence of research questions implies a controversy over its validity. Research by 4S members shows that all scientific theories are products of criticism, re-evaluation and revision by scientific communities. The theory of evolution is not uniquely subject to this critical process. The evidence supporting the theory of evolution is comparable to the evidence for the existence of subatomic particles, the structure of the solar system, or the function of the immune system. The efforts by intelligent design advocates to misrepresent evolution as uniquely hypothetical can only be explained by their alliances with religious and political groups outside of the scientific community. Thus the resulting efforts to change school curricula, textbooks and other teaching materials in alignment with intelligent design has diminished or censored appropriate instruction on evolution in science education.**

**The 4S encourages public education about the social dynamics of science, including scientific controversies. It is important for students to understand that the making of scientific knowledge often involves disagreements among experts; that does not make evolution a scientific controversy. The 4S supports the right of public school teachers to accurately convey the scientific community's knowledge in all fields, including that of evolution, without censorship or qualification.**

We recognize that this statement may be controversial for some members, and for that reason we offer the following report in the style of an “FAQ”:

*1) Q. Doesn't such a statement contradict the very basis for the discipline of STS? Why should 4S members support this kind of orthodoxy, when we have struggled to create a scholarly practice capable of questioning scientific authority, framing impartial explorations, offering “symmetric” accounts, and other approaches that are foundational to the social studies of science?*

A. One of the foundational principles of STS is that context is a crucial part of scientific knowledge and practice. The purpose of this statement is to offer public schools our assistance in a specific, limited context: the attempts, such as “Creationism” mandates, to undermine the teaching of evolution and related topics by deploying a misrepresentation of the scientific community's knowledge of evolution. We respect the religious rights of students; and encourage pedagogy that is focused on their accurate understanding of science rather than inculcating belief (eg [Smith and Siegel 2004](#)).

STS scholars should continue to freely conduct their research, writing and teaching on such issues in whatever way they like, including as opposing voices in this debate. But the principle of academic freedom does not relieve us of our collective responsibility as the preeminent academic organization for social studies of science. STS scholars have filled libraries with texts calling for greater accountability on the part of scientists, engineers, and their institutions. It would be hypocritical for us to exempt ourselves from that call (not to mention asymmetric).

2) Q. *The 4S is an international body. Isn't this problem only peculiar to the US?*

A. While many of the examples below are drawn from the US, the problem has international dimensions. For example, as noted in a [recent article](#) from the American Physical Society, Turkey's science textbooks began to diminish the presence of evolutionary biology following the 1983 military coup. Today their secondary school textbooks present it as a tentative hypothesis, alongside creationism. This may be a contributing factor to Turkey's low scores (43 out of 64 nations) on [international science literacy tests](#). There are few courses on evolutionary biology in Turkish universities, and no graduate or undergraduate degrees. More details of the issue in other nations are offered in question #4.

3) Q. *Why focus on this controversy in particular? Aren't there more important issues: global warming, reproductive rights, etc?*

A. While many controversies are relevant to STS, the evolution education issue stands out for the ways in which courts have been consistently putting STS concepts at the center of the debate. We continue to find cases of legislatures and courts that support the teaching of intelligent design in classrooms, and issues such as climate denialism have been linked in new legislation. For example, in 2012 the Tennessee state government approved HB368 / SB893, which allows educators to teach evolution, the origins of life, human cloning, and global warming as scientific controversies. As the leading organization dedicated to the social studies of science, the 4S can help the public understand the sociological distinction between scientific controversies that occur within the communities of scientists, and attempts by groups that lack scientific standing and yet claim similar "scientific" status for their beliefs. The latter should not be taught as an alternative view within science, and teachers should have the right to teach scientific knowledge without qualifying it by contrasts with these manufactured controversies.

4) Q. *Is there any evidence that Creationism/Intelligent Design (ID) does any actual social harm? Isn't this a victimless crime?*

A. In [this document](#) we have listed all the studies we could find on the effects of Creationism or ID on academic achievement, including both peer reviewed and non-peer reviewed sources. Of the 9 studies, 6 showed a negative impact. Belin and Kisida (2012) for example examined the relation between the percentage of a population in a state which supports teaching evolution in schools, and corresponding student science achievement. They found a statistically significant, positive correlation. This correlation did not appear for scores in math and reading, suggesting that it is lack of support for teaching evolution, and not extraneous variables causing the decrease in science scores (because other variables like race and economic status would affect math and reading scores as well).

Some authors have hypothesized that lack of support for teaching evolution is not only harmful for students in general, but creates disproportionately greater harm to certain groups such as the African American community: not only in its direct impact on children's academic performance but also indirectly in contributing to homophobia, opposition to contraception, exposure to HIV, etc. (see for example <http://evostudies.org/2010/06/how-does-creationism-harm-african-americans/>). There are institutional ties which are also suggestive of such links: for

example, the Southern Poverty Law Center lists the American Family Association (AFA) as a hate group due to their "propagation of known falsehoods" for the purpose of "demonizing propaganda" against LGBT people. Scott Lively, who was the California state director of the AFA, is widely regarded as the key inspiration for Uganda's recent legislation calling for the death penalty for homosexuality. The AFA is also a sponsor for Intelligent Design programs; for example the deceptively named "Science Excellence for All Ohioans" was launched solely by their Ohio branch. Their best-known spokesperson, Director of Issues Analysis Bryan Fischer, has linked the two issues in his radio broadcasts and writing; for example defending his anti-gay stance with rhetoric tied to his arguments against teaching evolution: "We're not animals in heat that have a biological compulsion to yield to every sexual impulse" ([http://www.newyorker.com/reporting/2012/06/18/120618fa\\_fact\\_mayer?currentPage=all](http://www.newyorker.com/reporting/2012/06/18/120618fa_fact_mayer?currentPage=all)).

Finally, we should note the potential for harm to STS itself. For example, many STS scholars have a strong interest in contributing to STEM education. If biology teachers only know STS for its role in support of the defendants in the Dover case, it makes such collaborations difficult to initiate. One need only examine the recent federal debates over continued [NSF support for STS](#) research to see that linking our discipline with Creationism and similar programs is counter to our interest in maintaining our status as a respectable academic discipline.

Sincerely,

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