

A Role for Scientists in Evolution Education

The theory of evolution is a critical, unifying concept in science that describes how living things adapt to changing environments over time. It is a tested and testable theory supported by evidence from many fields, including geology, paleontology, biochemistry, anatomy, and physiology.

Despite the fact that the scientific community has long accepted evolution as a central tenet, the inclusion of evolutionary science in public school science curricula continues to be challenged. In recent years a number of states and school districts have attempted to label evolution as a “theory, not a fact” implying that it could be easily disproved, or foster “critical analysis” by including non-scientific explanations for the origin of life such as creationism/intelligent design when teaching evolution in science classes. Proponents of creationism and intelligent design (ID) appeal to Americans’ sense of fairness with simple messages about presenting a diversity of views, while down-playing the implications of introducing faith and religious-based views into the science classroom. Over the years, scientists and teachers have worked hard to counter these assaults on evolutionary science by presenting scientific evidence. These efforts have met with success in many cases, but a wider scale effort is needed to reaffirm the importance of teaching sound science, including evolution.

Recognizing that challenges to the teaching of evolution also represent a threat to science and science education, 17 scientific societies representing the physical, chemical, biological, social sciences as well as teachers of science came together in an unprecedented effort to understand how the scientific community might best address this threat. The American Physiological Society participated in this Coalition of Scientific Societies, along with FASEB, the National Academy of Sciences, and

the National Science Teachers Association, among others.

The Coalition of Scientific Societies engaged a professional research firm to conduct a national survey examining voters’ attitudes on evolutionary science in the context of education. The survey also took into account respondents’ views on science and scientists. Because the wording of questions in many previous surveys forced respondents to choose between acceptance of evolution and religious beliefs, this survey was carefully constructed to avoid such a dichotomy. Importantly, the survey also

Regardless of whether they accept evolution, most Americans value the role that science plays in health, education and competitiveness. 63% of respondents ranked developing medicine and curing disease as the most important contribution of science to society.

Americans recognize and value the contributions that evolutionary science makes to modern medicine, with 61% of respondents indicating that understanding how evolution contributes to modern medicine is a compelling reason to teach it.

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explored how the scientific community might bolster support for teaching evolution and related topics.

The data and results of the study have been published in several society journals and are available online at <http://evolution.faseb.org/sciencecoalition>.

Among the highlights:

There is considerable uncertainty about what is appropriate to teach in public school science classrooms, particularly with regard to the inclusion of religious perspectives. A majority of respondents (53%) favored teaching evolution in public school science classes, compared to creationism (36%) and ID (27%).

There is a positive correlation between acceptance of evolution and science knowledge. Respondents were asked three questions to assess their level of basic scientific knowledge. Of the respondents who answered all three correctly, 78% believe that humans and other living things evolved over time, as compared to 36% of those who answered two or fewer of the science knowledge questions correctly.

Most respondents reported having favorable opinions of doctors (76%), scientists (69%), medical researchers (72%), and public school science teachers (59%).

When it comes to the debate over evolution, intelligent design and creationism, the public is interested in hearing from scientists (77%), science teachers (76%) and the clergy (62%).

Taken together, these results indicate that scientists and science teachers are welcome messengers and in fact have a very important role when it comes to conveying information about evolutionary science and science education. Further, the results show that the most effective messages should emphasize the connections between evolutionary science and advancing medicine and health.

This study highlights the critical need for scientists from all disciplines, including physiology, to become involved as advocates for science education. For more information on what you can do, please explore the resources available at: <http://evolution.faseb.org>. ❖