

Oklahoma Academy of Science Statement on Science, Religion, and Teaching Evolution – 2007

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Science and religion can coexist harmoniously if people understand the strengths and limitations of each field. Albert Einstein said, "Science without religion is blind and religion without science is lame." (1) Science and religion can complement each other - each informing the other in the domain where each is knowledgeable. Respected religious and world leaders such as Billy Graham, Jimmy Carter, Pope John Paul II and Pope Benedict XVI have written statements affirming harmony (2).

Strengths of Science – Science is very successful at understanding the tangible, perceivable world; anything that can be weighed, measured, detected, imaged or described objectively is the domain of science. Science can predict future actions of matter, energy, time, and space, based on past observations and experiments, or it can deduce past events, based on observing the results of those events. For example, geology can deduce what physical happenings occurred in the past and how long ago they occurred. Science can answer the HOW? and WHEN? Questions about the physical world extremely well. Science is self-correcting; if new data or better interpretations become available, the scientific community will refine or add to its conclusions to reflect the recent findings.

Limitations of Science – Science cannot answer the ultimate WHO? or WHY? questions. Science is restricted to the domain of physically tangible things. Science can explain HOW things work in ever-finer detail. For example, physiology is explained in terms of biology and chemistry, which is further explained in terms of physics. Beyond the most detailed scientific explanation lies another question -- What is the First Cause? Most scientists would argue that the "First Cause" is not knowable by the methods of science.

Teaching of Evolution in Public Schools – The Oklahoma Academy of Science strongly supports thorough teaching of evolution in biology classes. Evolution is one of the most important principles of science. A high school graduate who does not understand evolution is not prepared for college or for life in a technologically advanced world, in which the role of biology and biotechnology will continue to grow. The Academy affirms that the tangible, perceivable world is the domain of science and that science is clearly the discipline to explain HOW and WHEN the universe came into being. There is no credible scientific evidence that the earth came into being recently or that evolution is not the best explanation of the origins of living organisms. Science, by definition, starts with all available evidence, draws conclusions, and generates testable predictions. The content of science courses should be determined by scientists and science educators, and not by political or religious directives. In particular, science teachers should not be required to teach ideas, models, and theories that are extra-scientific (3). "Creationism" and "Intelligent Design" are not science because they do not conform to the testable and falsifiable criteria of science. It is not appropriate for science textbooks or science teachers to teach creation as science. Creation and other matters of faith are topics for religion, philosophy, and humanities courses.

Conclusion – The Academy regards the fundamental unity of life to be evident in the common building blocks and biochemical reactions of cells and in the remarkable conservation of information in DNA sequences across the biological kingdoms. The latter documents the relatedness of all organisms--plants, microorganisms, and animals.

The Academy contends that the acceptance of the general theory of evolution and a belief in God are compatible. A wide diversity of religious faiths and belief systems are celebrated in the community of science, and the overwhelming majority of scientists accept the principles of evolutionary theory. Many do this without compromising their individual faiths in a Creator. This includes many evangelical Christians today and in the past who accepted both the Judeo-Christian Bible and evolutionary theory. One such individual was Harvard botanist Asa Gray, who was also Charles Darwin's principal and earliest American proponent in the nineteenth century. There is no inconsistency in holding both viewpoints because the practice of science--

observation, measurement, forming and testing hypotheses, controlled experimentation, drawing conclusions, and finally establishing an overall theory of how things happen--simply does not address the ultimate questions of purpose. The theory of evolution is our most rational system that explains an enormous number of observations; why or by whom that system was set in motion is not within the bounds of scientific inquiry. (4)

Understanding of the strengths and limitations of both science and religion can alleviate concerns of both scientists and non-scientists. Scientists do not accept the suppression or neglect of well-understood science because non-scientists dispute it for non-scientific reasons. Similarly, science does not speak on issues of purpose and creation, as these are not objectively testable. Science and religion have different perspectives when they address common issues, and recognizing the differences may make it possible for those active in both to realize that their most important goals are not in conflict.

1. Einstein, A. *Out of My Later Years* , Citadel Press, Secaucus, NJ, 1974, page 26
2. New York Post, July 26, 2007
3. Paragraph modified from Oklahoma Academy of Science statement, 1981.
4. Paragraph modified from Oklahoma Academy of Science statement, 1999.