

Substantial Disruption



Arizona Schools Superintendent Floats Off into Space

By Mike Tully

Keep an eye on [Arizona Superintendent of Public Instruction Diane Douglas](#). She's about to float off into space. Douglas does not believe in gravity, so there's nothing to keep her tethered to terra firma. Since there is no gravity on planet Douglas, several well-meaning bystanders – by which I mean people in Phoenix with nothing better to do – need to step in with tent stakes and twine and give her the [Gulliver treatment](#). Pin her to the ground before she collides with the moon.

In fairness, Douglas has not specifically stated that she does not believe in gravity, but that's the logical conclusion from statements she has made while defending her proposal to eliminate references to the [scientific theory of evolution](#) from the Arizona Science Standards. As Howard Fischer reports in [Arizona Capitol Times](#), Douglas "is trying to downplay – and in some cases remove entirely – references to evolution in the standards of what students are supposed to be taught in Arizona high schools." Her proposal is in a [draft of proposed new standards](#) for teaching science in Arizona's public schools. For example, in the current standards, 8th graders are expected to "develop the understanding of (how) adaptations contribute to the process of biological evolution." The proposed standards change this to "develop the understanding of how traits within populations change over time." Apparently, students will be expected to figure out how population traits change over time without the benefit of information about evolution – the one scientific theory that explains it.

When Douglas hears the phrase "scientific theory," her anti-gravity mechanism blots out the first word, leaving the easily attacked term "theory." "Evolution is a theory in many ways," Fischer quotes her as saying. "That's what our children should understand." That's probably why the proposed standards change how they apply the term as follows:

CURRENT STANDARD: The unity and diversity of organisms, living and extinct, is the result of evolution.

PROPOSED STANDARD: The theory of evolution seeks to make clear the unity and diversity of living and extinct organisms.

The current standard reflects the well-established theory of evolution. The proposed standard is pedagogical gibberish and unworthy of our schools. But it's Douglas' way of dismissing evolution as "just a theory."

There is no need to redefine the scientific theory of evolution, but there is a need to introduce Douglas to the 21st century. She might consider this [comment](#) from the [American Association for the Advancement of Science](#):

"A scientific theory is a well-substantiated explanation of some aspect of the natural world, based on a body of facts that have been repeatedly confirmed through observation and experiment. Such fact-supported theories are not 'guesses' but reliable accounts of the real world. The theory of biological

evolution is more than ‘just a theory.’ It is as factual an explanation of the universe as the atomic theory of matter or the germ theory of disease. Our understanding of gravity is still a work in progress. But the phenomenon of gravity, like evolution, is an accepted fact.”

"Part of the problem is that the word ‘theory’ means something very different in lay language than it does in science," [writes](#) Tia Ghose in *Scientific American*. "A scientific theory is an explanation of some aspect of the natural world that has been substantiated through repeated experiments or testing. But to the average Jane or Joe, a theory is just an idea that lives in someone's head, rather than an explanation rooted in experiment and testing."

Douglas’ issue with the scientific theory of evolution might not be confined to a misunderstanding of the term, but religious-based opposition. She declared her support for teaching [intelligent design](#) during a Republican party event last November. When asked if the theory of intelligent design should be taught along with the theory of evolution, she responded, “Absolutely.” Intelligent design “holds that certain features of the universe and of living things are best explained by an intelligent cause, not an undirected process such as natural selection.” An “intelligent cause” is another term for “supreme being,” which means that teaching intelligent design in public schools would violate the First Amendment. That’s undoubtedly why Douglas denies the proposed changes in the teaching standards have anything to do with intelligent design. However, once you downgrade evolution to “just a theory” that does not explain the “unity and diversity of organisms,” you open the door for pseudoscience – like intelligent design. Douglas shoved the door open a bit when she was asked if there is a scientific basis behind intelligent design, answering, “Maybe there will be someday.”

When Douglas insists students should be cautioned that a theory is only a theory, she should be directed to these comments by the [National Academy of Sciences](#): "The formal scientific definition of theory is quite different from the everyday meaning of the word. It refers to a comprehensive explanation of some aspect of nature that is supported by a vast body of evidence. Many scientific theories are so well established that no new evidence is likely to alter them substantially." The Academy cites examples: heliocentric theory (the Earth orbits the sun), cell theory (living things are composed of cells), atomic theory, and plate tectonics (continents drift). And, of course, there is gravity.

But Douglas does not really believe in scientific theories like these, so why should she be bound by them? If she wants to live on a flat planet, so be it. If she wants to float off into space, then let Diane be untethered and warn the moon. That would create an opening for a new incumbent. Could there be a Superintendent of Public Instruction in Arizona who actually believes in teaching legitimate science to our kids? Maybe there will be someday.