

Academic Freedom Championed at JCE

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One of the adversaries of Intelligent Design (ID), Dr. Eugenie Scott, is on record stating that, in her view

“A very popular American tradition is the ‘fairness’ or ‘let’s let all sides have their say’ and so forth. This is a wonderful cultural tradition – it’s irrelevant in science...It sounds really unfair, but it isn’t the job of the high school teacher to decide that students need to be exposed to views that are on the fringe of science. The job of the high school teacher is to try to communicate the consensus view of science – otherwise, you’re really misleading those kids.”¹

Many are inclined to accept this clearly stifling and unproductive educational approach, were it not for evidence and sentiments to the contrary. Thankfully, we have a recent example that Scott’s claims are without merit in the current issue of the Journal of Chemical Education (JCE). It seems that William Howard (University of Alaska) made some waves last year in his peer reviewed article about Potassium-Argon dating methods.² This month, a letter appears in JCE by one Karen Bartelt of Eureka College, taking Howard to task for implying that “there is a controversy about the validity of radiometric dating”, calling his piece, among other things, “a *caricature* of critical thinking”, noting that “to cast doubt on the accuracy of K–Ar dating, Howard sets up nonsense criteria—red herrings—that inculcate doubt in his audience, but are irrelevant.”³

Howard, equal to the challenge, responds to Bartelt, noting that

Radiometric dating is a well-established field of science, but this fact should not be used to intimidate someone from asking questions. Scientific knowledge advances only when well-established practices are questioned, and questioning radiometric dating is the responsibility of all professional scientists everywhere.

When teaching chemistry, I introduce my students to a number of theories, such as Atomic Theory, Quantum Theory, Valence Bond Theory, Molecular Orbital Theory, Crystal Field Theory, and more! These theories are well-established and supported by a great deal of experimental evidence. Nevertheless, I encourage my students to question the experimental support and to think of new experiments that could potentially falsify the theories. This activity is extremely important for producing first rate scientists. The students are well aware that these theories are

¹ *Icons Of Evolution: The Growing Scientific Controversy Over Darwin*, Coldwater Media, 51 minutes.
<http://www.coldwatermedia.com>

² [Howard, William A.](#) *J. Chem. Educ.* **2005** 82 1094.

³ [Bartelt, Karen E.](#) *J. Chem. Educ.* **2006** 83 545.

not “controversial”, and that we question these ideas simply as an intellectual exercise.⁴

There is an extremely valuable lesson here, and it runs counter to the tune currently being played out by adversaries of ID. In the view of Dr. Eugenie Scott and others like her, it seems likely that ID doesn't qualify as an idea that can effectively stimulate students in their discovery of what real science is and is not.

But the exchange between Howard and Bartelt becomes an even more valuable lesson as the original reviewers of Howard's paper respond to Bartelt's complaints. Their comments provide us with some extraordinary insight that opponents of ID would do well to heed.

Reviewer Reed Howald notes that

Karen Bartelt's letter is not a fair evaluation of the [William A. Howard paper](#). There are educational advantages of getting students involved in the scientific analysis of even controversial topics like the potassium–argon method of dating minerals.

I trust that student discussion of the potassium–argon method of dating minerals can be valuable in teaching the scientific method.⁵

However, the comments of referee reviewer Richard Firestone adds these pearls of wisdom:

*Karen Bartelt's letter criticizing the paper by [William Howard](#) that I reviewed goes too far. I may have been naïve about Howard's intentions, and I agree with her concerns about intelligent design, but this paper must be considered **on its merits**, not on perceived intentions. The Howard paper should be credited for teaching students to be critical in their analysis of data.*

Students should be taught to be very critical of established analytical procedures. Results should be analyzed with an eye on whether they are reasonable, not only precise. A Ming vase dated to 700,000 B.C.E. would make no sense, no matter how careful the measurement seems. Howard's intentions may be clear to Bartelt, but I don't think that he crossed the line with his arguments. Bartelt's concerns are shared by many of us, but are we going to reject this paper on the basis of our perception of the author's intentions? It is not the job of the Journal of Chemical Education to create a litmus test for what papers might or might not have hidden intelligent design meanings. (emphasis added)⁶

⁴ [Howard, William A.](#) *J. Chem. Educ.* **2006** 83 546

⁵ [Howald, Reed A.](#) *J. Chem. Educ.* **2006** 83 547

⁶ [Firestone, Richard.](#) *J. Chem. Educ.* **2006** 83

Notice that Bartelt's interpretation of Howard's motivation or intentions are dismissed by Firestone – as they should be. Motivations are ultimately irrelevant when determining the validity of any scientific theory. In the ID debate, many opponents claim that ID advocates have 'religious' motivations, which should have absolutely no impact on the scientific validity of ID. Many valid ideas in science have come to us as the result of dreams and imagination. In the end, motivation and inspiration of an idea are not important in the scientific enterprise – what truly matters is whether an idea can stand on its scientific merits alone.

The entire JCE exchange is well worth reading, and is very instructive on the value of presenting students with ways to critically analyze even established practices of science.

Now, if we could just get our courts to agree...

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