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Blogging about research issues at Ohio State University



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Are huzzahs enough?

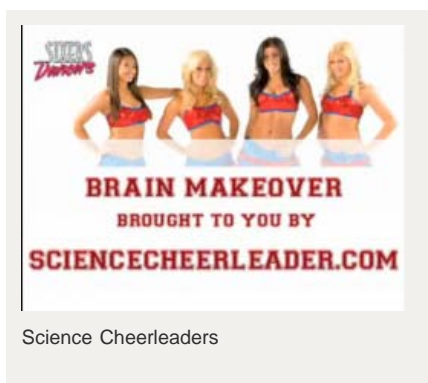
Posted on October 5th, 2009 by earleholland

Perhaps naively, I've always thought myself open to new ideas.

Partly, I suppose, it's because innovation is seen as progressive and positive, and who wouldn't want to be seen as being receptive to new invention? More accurately though, it's probably traceable to the general premise that one cannot embrace science without supporting new discoveries.

Regardless of the inherent bond between the appreciation of science and open-mindedness, there simply have to be limits. That's my explanation for the fiercely visceral reaction I have to some of the efforts now underway that claim to be in support of science.

Topping the list should be the website "[Science Cheerleader](#)," an effort by a former cheerleader for the Philadelphia 76ers basketball team to more vividly bring science to the public. Darlene Cavalier [explains](#) that her early years as both a college, and then professional, cheerleader and a job at Discover Magazine eventually led her to earn a master's degree.



... I realized I need to combine the academic attitude of UPenn, the mass reach of Disney, and the in-your-face, pom-pom waving personality of a 76ers Cheerleader to kick-start the process.

I founded the Science Cheerleader to get the conversation going, rally the troops, solicit views from all sides and change the tone of science and science policy in this country.

Optimistic? Sure! Energetic and determined? Of course! I'm the Science Cheerleader!

The first stop at the Science Cheerleader website is a page offering a "[Brain Makeover](#)" that promises to reveal "what everyone needs to know to be a science literate" (sic). Eighteen little video vignettes fill that page with messages like . . .

"The universe is regular and predictable"

"Atoms are bound by electron glue"

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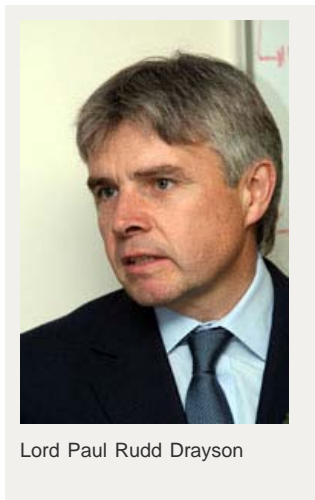
"All living things are made from cells, the chemical factories of life."

The *USAToday*-like factoids are offered by attractive young women in full cheerleader garb, replete with shaking pom-poms, in an effort to raise the scientific literacy of the website's visitors.

But aside from acknowledging that some viewers' will likely experience a sudden enhanced activation of their endocrine system, I can't see what this will do to improve their understanding of science. Bare midriffs may have helped auto dealers sell more cars in the 1970's but I hardly see how they'll make quantum mechanics any less dense today.

Perhaps Cavalier's project represents a street-savvy effort to foster a public "appreciation" of science. In recent years, the traditional goal of a public "understanding" has given way to the alternative "appreciation," if for no other reason, to acknowledge the growing complexity of science. It's far easier to appreciate than to understand, or so the logic goes.

And perhaps that was what was behind the position taken [British Science Minister Lord Paul Rudd Drayson](#) last month when he debated a well-known critic of British science journalism, [Dr. Ben Goldacre](#). The exchange, touted widely within the science communications world and [still available on the web](#), was anticipated because the two speakers were diametrically opposed in how they saw the way the British news media's efforts at reporting on science.



For his part, Lord Drayson was congratulatory of the reporting arguing repeatedly that the continuing coverage of science and medicine in that country's newspapers kept the fields foremost in the minds of British readers.

Goldacre, who operates a popular website called "[Bad Science](#)", however, saw the situation with a glass-half-empty view and pointed to the glaring inaccuracies, exaggerations and sensationalism that he said permeated their national science coverage.

Drayson suggested any science coverage helped the cause and therefore should be applauded while Goldacre withheld tolerance – much less praise – for reporting that ultimately was wrong and misled the public.

And that, I guess, is the sad state of affairs that now exists.

We're either torn between attitudes where we are so desperate for any attention given to science that we'll rejoice at the mediocre and accept the inaccurate, or we demand a level of precision and fact that requires more from most readers than may be reasonable to expect.



Science, like most subjects, isn't easy – it takes effort. Then again, most

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RESEARCH NEWS WEBSITE



things worth knowing take work. ___Earle Holland



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4 Responses to “Are huzzahs enough?”

[Darlene](#) // Oct 6, 2009 at 9:32 pm

Thanks, Earle. I'd like to add that the “Brain Makeover” is one of several efforts we're using at ScienceCheerleader.com to increase adult science literacy (understanding and appreciation of science and engineering).

A citizen science matchmaking tool and an international effort to support the opening of a Federal, participatory technology assessment agency are among the other efforts. But, I've got to tell you, Brain Makeover, is by far the most popular, and I'd argue, successful of the bunch thus far. Sure, people are amused or horrified by the cheerleaders in the first few seconds. But, Professor Trefil's accompanying blogs and the interactive quiz have provided a base level of science knowledge many of the readers haven't been exposed to since high school (assuming they learned this in high school). We may like to believe that there's one way to teach or learn science or that only a selected few deserve to possess the knowledge because they had the time, money and passion to study science for many years but, the fact is, “average” citizens—only 1/5 of whom are “science literates”[sic] 😊 — pay for half the basic research in the U.S. and have a say in critical matters of science policy. We need to pull out all the weapons to present them with a base line of knowledge and, with any luck, they'll feel entitled, capable and interested enough to return to the well to learn more...and more...and more.

Thanks for the discussion. I appreciate your insights.

-Darlene

[Earle Holland](#) // Oct 7, 2009 at 1:31 pm

Darlene:

First let me say that I never suggested, nor do I believe, that there's “one way to teach or learn science or that only a selected few deserve to possess the knowledge because they had the time, money and passion to study science for many years,” as you state. In fact, I've spent more than 35 years at trying to help the public understand science and share my enthusiasm for it (check out my background for proof).

And your estimate of one in five Americans being “science literate” is a little off. Scholar (and friend) Jon Miller has been doing surveys on the depth of Americans' understanding of science and technology for more than a quarter-century and his 2008 work showed that only 28 percent of our countrymen can pass that simplistic science test. This is, of course, no cause for joy since it means that better than two out every three of us are functionally scientifically illiterate.

When you say that the public should “have a say in critical matters of science policy,” that, on the surface, seems empirically logical. But the clarity fades when you factor in the complexity of the science. The question isn’t whether the public should have a voice in matters of national science policy — it’s whether the public wants to do the learning required to offer constructive, intelligent opinions to the discussion.

Do you want the nearly half of the U.S. population who discount macroevolution and basic biology to be involved in policy issues surrounding biomedical research? Do you want the third of the population who believe UFOs are alien spacecraft to be influencing American space policy? I don’t!

Plenty of research has shown that science literacy comes more from adopting a way of thinking that it does memorizing any series of facts. So throwing factoids — regardless of how attractive — at the public doesn’t really help.

People need to want to understand science and research and invest effort in that process. But getting them to work at it has gotten tougher in our sound-bite, short-attention-span world. __Earle Holland

[Darlene](#) // Dec 13, 2009 at 6:09 pm

Earle,

Yes, I want everyone to be invited to the table to weigh in on federal science policy issues. Period.

Science is but one factor considered when developing policy: economics, societal implications and risk assessment are others and I absolutely believe the general public can and should be brought into these discussions. This works and it works well in other countries. Our science literacy rates are higher here than in many other countries yet they’ve found a way to open dialogue through deliberate activities.

My facts aren’t off, Earle. They came from Miller via his collaborator James Trefil who partnered with me on the Brain Makeover series.

Thanks for getting me fired up on a Sunday evening...I think I’ll go for a loooooong run.

[earleholland](#) // Dec 14, 2009 at 1:01 pm

Darlene — Of course, I respect your right to opinion on this issue but vigorously oppose the logic. The general public isn’t brought in on other major areas of public policy — nobody asked us if we wanted to be at war and when we overwhelmingly call for a “public option” in health care reform, our voices don’t matter. In areas as complex as science policy, participants need to have some substantive grounding in science, and our science literacy rate, to which you refer, is hardly reflective of an adequate understanding of science among the public. And that is based on years of discussions with Miller, for whatever that’s worth. Hope you had a good run. __Earle

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