

Test Your Scientific Literacy

Why literacy matters for Christians and for society as a whole.

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Are you scientifically literate? A key goal of the Nature cluster in the general education program at Wheaton is to ensure that our graduates leave with an appreciation of nature and a solid grasp of what we can learn about the universe via the scientific method. But how much science do our students really learn during their education at Wheaton? To test your knowledge, answer the following true/false questions, then read on:

1. *Sufficient experimental evidence can demonstrate that a scientific theory is true.*
2. *Science is partly based on beliefs, assumptions, values, and the non-observable.*

Understanding both the extraordinary possibilities of what science can do (likely a lot more than we often think), and what it can never rightly do for us (perhaps even more important), lies at the heart of true scientific literacy. Today, Wheaton grads enter a world that is more saturated with scientific and technological twitterings than ever before. As a result, it

is becoming increasingly difficult to separate the possible from the impossible, let alone the ethical from the dangerous, or the wise from the shortsighted.

“Cold fusion,” for example, initially promised infinite, clean energy in a big media splash in 1989. It was quickly debunked as fraud and pseudoscience, but has now recently made a scientific comeback. And though it might seem like science fiction, physicists have actually made cloaking devices from exotic metamaterials that can bend light around objects, rendering them invisible.

Of course, with science’s power comes the potential to do more harm than good. Environmental activists warn of the dangers of genetically modified foods, and of the threat of a “grey goo” of self-replicating nanobots multiplying out of control and consuming the biosphere. In movies, we contemplate a future in which our machines become super-intelligent, and condemn us to lives of slavery or annihilation. Alternatively, some science utopians envision a nano-bio-technology-based future in which the human body and mind are fused with machines to

create a new, improved, transhuman species, called H+.

With such fantastic possibilities, many find it hard to discern what’s legitimate, and more importantly, what is worth pursuing. For some Christians, science presents an added challenge, as scientific truth can appear to be at odds with closely held religious beliefs. Biological macroevolution is often assumed as an explanation for the origin and development of life on earth, with no apparent necessity of a Creator. A large number of planets orbiting stars other than our own have recently been discovered, raising the possible consideration of life beyond earth. Finally, mathematical “Theories of Everything” like String Theory purport to be the ultimate description of our existence.

Getting back to the test questions—number one is false. Science operates by falsification; no theory can ever strictly be proven true, only false. Number two is true, as it is inevitable for any activity performed by humans. If you answered both questions correctly, you are more literate than the average citizen.

Unfortunately there is no shortcut to true scientific literacy, but the need is clear for a well-informed Christian dialog, for scientists and lay people, to help guide society toward a bold new future.

Dr. Stewart M. DeSoto '88 recently completed his Faith and Learning paper, “Spiritual Progress and Technological Eschatology” and a chapter for Nanomaterials for Energy Storage Applications. He uses NMR to characterize Metal Organic Framework materials with possible application to automotive fuel cells. He and his wife, Laura Drach DeSoto '88, have two children, Riellie and Zachary.

