How to recognize Good Science

Compiled by Dr. Douglas Duncan and his students at the University of Colorado

Web or other sites:

1. Should be logical, based on facts and data, not just opinions.
2. Clear references are given so that you can look up data and check that statements are accurate.
3. Information has been published in *peer reviewed* (checked by other scientists before publication) journals.
4. Contrary information is given when it exists, not just information supporting an idea or theory.
5. What is not known is identified.
6. Should be repeatable/ have a large enough sample size
7. If humans are involved, should be "blind" to allow for conscious or unconscious bias

If a claim is extraordinary, it demands extraordinarily strong evidence. - Carl Sagan

Two special good sites for reliable information about important topics:

1. The *National Academies* (Independent – not government - organization of several hundred of the country's best scientists). Publishes understandable articles about topics of high public interest. http://www.nationalacademies.org/

2. The *American Association for the Advancement of Science* (AAAS): The worlds largest general scientific society, with many thousands of members. Also publishes the scientific consensus about topics important to the public. http://www.aaas.org/

Two more useful websites: www.FactCheck.org (fact-checks public speeches; Univ. of Penn. Annenberg Center) and www.snopes.com (tracks down Internet rumors)

The complete curriculum, "**Teaching the Nature of Science using Pseudoscience" - A Semester-long Curriculum to accompany any Introductory Science Course, is available for FREE DOWNLOAD,** with curriculum notes, at

http://casa.colorado.edu/~dduncan/pseudoscience