Life Science Summit IV
February 20, 2009
Casper, WY
Readings, Student Work and Questions for Discussion

Readings:

Nehm R.H., T.M. Poole, L. Carruth, M.E. Lyford, S.G. Hoskins, B.E. Ewers, P.J.S. Colberg. 2008. Does the Segregation of Evolution in Biology Textbooks and Introductory Courses Reinforce Students' Faulty Mental Model of Biology and Evolution? *Evolution Education Outreach* DOI 10.1007/s12052-008-0100-5.

Peshkin, M. 2006. Addressing the public about science and religion. *Physics Today* **59**:46-47.

Student Work:

Please bring examples of student work to share with a small working group. Student work could be from an assignment, quiz, laboratory report, or exam. Bring one example of high quality work, one medium, and one low quality. Also, make seven copies of each piece of work, making sure to omit any student names from the work.

Student work should be or potentially could be related to the nature of science or evolution. Discussions of the student work will focus on teacher expectations and student abilities. In addition, discussions of the student work will identify misconceptions about the nature of science and about evolution, and will examine how varying concepts in biology could be linked to evolutionary principles (related to the first reading). Hence, student work related to **ANY** concept in biology should work (e.g., ecology, genetics, mitosis, meiosis, cell structure and function, photosynthesis, respiration, DNA structure and function, protein synthesis, taxonomy, diversity, organism structure and function, biomes, food webs, etc.).

Questions to Think About:

In addition to examining and discussing student work, we will be discussing several questions.

1) What differentiates science from other endeavors of understanding?
2) How does scientists' use of the term 'theory' differ from others?
3) What factors/mechanisms can lead to evolution?

So that we are all on the same page when talking about evolution, here's our working definition:

Evolution: Changes in the allele frequencies of a population over time.

If you have any questions, please feel free to contact Mark Lyford (mahler@uwyo.edu; 307-766-2818).