

Introducing Pre-service Teachers to High Quality K-8 Science Trade Books through a Mock *SB&F* Election

By Dr. Tim Gerber and Dr. Eric Brunsell

“Discourse in science, mathematics, and technology calls for the ability to communicate ideas and share information with fidelity and clarity and to read and listen with understanding.” This quote taken from *Science For All Americans* (p. 192), which contains a series of science, technology, engineering and math (STEM) education recommendations produced by Project 2061 (<http://www.project2061.org/publications/sfaa/online/sfaatoc.htm>), succinctly identifies the importance of communication in the STEM disciplines. The development of these communication skills should begin early in the elementary years and progress throughout life. To assist students in developing these skills, K-12 teachers should be able to effectively evaluate quality STEM trade books and educational materials. This article describes the development of a Mock *Science Books and Films (SB&F)* Election project as a mechanism for improving elementary / middle level pre-service teacher’s abilities to evaluate STEM non-fiction.

The Mock *SB&F* Election project was collaboratively developed by University of Wisconsin – La Crosse (UW-L) faculty from the Biology and Education departments with support from the UW-L School of Education, Murphy Library and Institute for Innovation in Undergraduate Research and Learning. The project was developed around the annual *SB&F* Prize for Excellence in Science Books awards finalist books. Fifty-four elementary and middle pre-service teachers (university students in the UW-L School of Education preparation program) were divided into two groups based on *SB&F* Prize categories for “Children’s Science Picture Book” and “Middle Grade Science Book.” Pre-service teachers read and evaluated each finalist in their respective category. Books were evaluated using modified versions of the actual *SB&F* Prize evaluation rubrics (see <http://www.uwlax.edu/murphylibrary/departments/curriculum/stem/mockSB&F.html>). The “Children’s Science Picture Book” rubric included two additional criteria to help evaluators focus on the book’s potential to engage students and connections to the Wisconsin Model Academic Standards for Science. The rubric for the “Middle Grade Science Book included the two additional criteria from the picture book rubric and a series of four criteria focused on visual representations (illustrations). Criteria related to illustrations are included in the *SB&F* evaluations for picture books, but not middle grade books. We felt it was important for pre-service teachers to be able to evaluate illustrations at any grade level.

After reading all of the books in their category, pre-service teachers convened in small groups to discuss their individual evaluations. During the discussion, pre-service teachers were instructed to come to consensus on the *SB&F* finalist book that they felt was the best in their category. Pre-service teachers discussing the Children’s Science

Picture Book category overwhelmingly (80% of groups) selected *Where in the Wild*, which was also the official *SB&F* Prize winner. Pre-service teachers discussing the Middle Grade Science Book category were more split on their “best” book from the *SB&F* finalist list. One half of the groups selected *Tracking Trash*. Interestingly, the only middle grade book that was not selected by at least one group was *Dinosaur Eggs Discovered*, the *SB&F* Prize winner.

Pre-service teachers were also asked to identify which judging criteria was the most important for their deliberations. Pre-service teachers felt that it was important for all books to have a clear purpose, be well organized, and accurately present scientific concepts. Pre-service teachers also strongly felt that books in the Children’s Science Picture Book category be engaging to elementary aged students.

Mid-project and final evaluations showed that pre-service teachers thought this project was a valuable experience. We expect that the Mock *SB&F* Prize Election project will continue in UW-L’s K-8 science methods courses. Three sets of Finalists books are needed for a semester-long project with up to sixty participants. The books can be used for one calendar year before being replaced by new finalist books. We will be extending the life of these books by making them available at the curriculum resource center within UW-L’s Murphy Library.

In addition to the pre-service teacher project, a middle school version of the Mock *SB&F* Prize Election is currently being developed with a local school district to begin when the 2009 *SB&F* finalist list is announced later this year. The middle school version is being developed to engage sixth grade high performance learning students in both reading and STEM topics.

REFERENCES:

SB&F Prize for Excellence in Science <http://www.sbsonline.com/prizes>

STEMSS website: <http://www.uwlax.edu/murphylibrary/departments/curriculum/stem/index.html>

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