

JANUARY 2013

CURATOR THE MUSEUM JOURNAL

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SPECIAL ISSUE ON
COMMUNICATING SCIENCE

Article published in Curator Magazine, January 2013

Author: Dr. Alan J. Friedman, director of the Lawrence Hall of Science 1972-84 and the New York Hall of Science 1984-2006. Deceased May 2014.

Reflections on Communicating Science through Art

For the past 40 years I've been interested in the connections between science and the arts. My interest was piqued when college English professors Hardin Goodman (Florida State University) and Michael Gregory (San Francisco State University) revealed to me that many novelists were actually talking about science in stories that on the surface never discussed science. . . .

If science can inspire art, can art inspire interest and learning about science?

. . . *Guardians*, co-produced by the Long Beach Ballet and the Aquarium of the Pacific, and performed on the main floor of the Aquarium. A ballet may be an extreme example of communicating science in a science-rich cultural organization, because there are literally no words in this communication. There are music, video, costumes, props, and above all motion. But no words. A year earlier I would have pleaded for words, at least a full explanation in the program of the science which informed the ballet, preferably with a scene-by-scene explanation of the history and the scientific understanding which I believe is represented in each scene. But that must not be how successful ballet works, because somehow, without any words, and only a single paragraph of explanation in the program, this performance manages to "discuss" the evolution of life in the seas, the very different kinds of life which later evolved on land, how the two realms came into conflict, and the sensibility which might allow that conflict to be resolved.

Perhaps the most difficult part of climate change education, which scientists have been struggling to grasp, is how to communicate the overwhelming consensus of scientists on the real and present danger, the responsibility of our civilizations for causing a significant part of that danger, and the cost/benefit equation of avoiding irreversible damage. Apparently simply using the tools of current science pedagogy is not enough; the level of discourse (e.g., the recent Presidential campaigns in the US) barely acknowledges there is a problem to be discussed. Without a sense of urgency, which science communicators have failed to communicate, most of this nation doesn't care enough to try.

Enter the arts. In the heart of *Guardians* is a dream sequence, in which a man somehow finds himself in the presence of a lovely sea creature (danced by a 16 year-old ballerina), who offers him a seashell. The dream marks the central turning point in the story, as the land creatures eventually come to appreciate the value of the diversity of sea creatures, accept responsibility for the impacts of the land-creatures' actions, and undertake new roles as guardians. Learning through a dream is about as remote from traditional science pedagogy as I can imagine, but perhaps it is a missing piece we rather desperately need to communicate the really important things about science. Not through deep psychological analysis of dreams, but through made-up dreams as one of the artist's tools, so different and so complementary to the tools we are comfortable with as science educators. Not that it would hurt to have a scene-by-scene explication on a web site, or to invite the public to debate the meaning of the ballet, but those tools are just not essential to the power of the ballet to communicate.

[Insert figure 2: Image from the dream sequence in *Guardians*, danced by Evan Swenson and Megan Wilcox]