

## INTERVIEW

Interleaved excerpts from interviews of Dudley Herschbach (DH)  
by John Rigden (JR) on May 21–22, 2003  
and  
Bretislav Friedrich (BF) on March 5–9, 2012\*

Science is a human enterprise. I think we assess a scientific contribution in much the same way we respond to a work of art. Whether a performance, a painting, a book, or architecture, we value art highly if it changes how we feel or think about something fundamental in our life experience. Such a response of course depends very much on the beholder's own background. The most esteemed artistic creations have wide and enduring appeal across human cultures and generations.

Judging what's good science usually requires more specialized knowledge than assessing art (although sometimes the opposite may hold). Good research connects with something fundamental, often much broader than the particular project or problem under study. Generally it seeks insight or a fresh perspective on such fundamental issues and suggests further avenues to explore or provides new tools, conceptual or instrumental. A sure criterion for an important paper in your field: Does reading it change in a basic way how you think about the topic? It's yet more important if it changes what you will do next. So, as with art, the assessment comes down to the impact on other people. That depends a lot on historical context and contingencies. The impact of significant advances in some cases is quickly appreciated. In other cases what initially was considered just an oddity is only later recognized as a major advance. The recent Nobel

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are given by Nature. The prizes really should go to atoms, molecules, and ideas, but we don't know how to do that, so give them to people instead. As you know,