

The IMSA Great Minds Program®



Tuesday September 18, 2007

4:30 PM - 5:30 PM

**Pearson Lecture Hall
Illinois Mathematics and Science Academy
1500 W Sullivan Road
Aurora, IL 60506**

**Dr. Dudley Herschbach, Nobel Laureate
Department of Chemistry and Chemical Biology,
Harvard University, Cambridge, MA**

“The Science of Elections”

In any race with more than two candidates, plurality voting, which allows citizens to vote for only one, may elect the candidate least acceptable to the majority of voters. Plurality voting also forces minor-party candidates into the role of spoilers, often decisive in a close contest between two major-party candidates. These flaws, absurdly contrary to the basic aim of democracy, seem to be accepted by the public and media as inevitable. Much better voting systems are available, as confirmed by the science of elections, fully developed but largely ignored. This talk compares properties of some of these alternative voting systems and traces the lively history of election theory, illustrating especially paradoxical aspects elucidated by Lewis Carroll in the 19th century and by Kenneth Arrow, Steven Brams, and Donald Saari in the 20th. Just last year, two young French economists, Michel Balinski and Rida Laraki, proposed a method that at last appears to avoid all paradoxes; it emerged from a wine competition!

Born in San Jose, California, Dr Herschbach grew up on a farm, milking cows, feeding chickens and pigs. First in his family to attend college, he was recruited as a football player, and earned a B.S. in math at

Stanford and a Ph.D. in chemical physics from Harvard. As a beginning faculty member at U.C. Berkeley, he undertook “impossible, lunatic fringe” experiments to probe reaction dynamics of molecules in single collisions. That work brought him back to Harvard in 1963 and resulted in a Nobel Prize in 1986. He is still active in research at Harvard Chemistry and as a visitor at Texas A&M Physics and the Carnegie Geophysical Laboratory in Washington, DC. His efforts to enhance science education and public understanding have centered on Science Service, which publishes Science News and conducts the Intel Science Talent Search and the Intel International Science and Engineering Fair. He is a member of the Screen Actors Guild, by virtue of a few TV appearances, including as a guest voice on The Simpsons. He is also a life member of Friends of Benjamin Franklin and of the Sierra Club, and chairs the Hans Bethe Center for Arms Control and Nonproliferation.

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