APR09-2009-020005

Abstract for an Invited Paper
for the APR09 Meeting of
the American Physical Society

Half a Million Hands: On the Road with the Little Shop of Physics

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Can students learn science concepts by exploring and experimenting in an open-ended unstructured environment? Ever since our first school visit in the early 1990s, the focus of the Little Shop of Physics (http://littleshop.physics.colostate.edu) has been to present an open-ended, hands-on physics experience for K-12 students. Our projects are built and our programs are presented by a dedicated group of undergraduate science students who receive a valuable service learning experience. These students learn a lot of science and some very practical skills. But how about the K-12 students we visit? We know that we get K-12 students interested, that they like our program—but are we teaching them anything? We have recently become and education partner of a large research project, the Center for Multiscale Modeling of Atmospheric Processes (http://www.cmmap.org) at Colorado State University, which has given us a chance to expand and carefully evaluate the work that we do. In this talk I will present samples from the different types of programs we present, from school programs to television programs to teacher workshops, as well as recent data demonstrating the effectiveness of the work we do. There will be some cool projects, some interesting observations, some remarkable stories—and some good, solid data.