

## **EPICS: Children's Educational Demonstrations**

### Abstract

The Purdue Engineering Projects in Community Service (EPICS) program partners undergraduate student teams with community organizations in need of engineering assistance. Team CED (Children's Educational Demonstrations) has partnered with The Children's Museum of Indianapolis to develop interactive exhibits for the museum's SciencePort initiative. SciencePort is a small classroom where elementary and middle school students get hands-on experience with science and engineering concepts demonstrated throughout the museum. Team CED is working on three projects: Earthquake, Hydrology, and Windmill. Each project illustrates engineering and science principles in an engaging and exciting way.

The Earthquake project teaches students basic principles of geophysics and earthquake engineering. This team is creating a shake table that mimics the effects of earthquakes. Students will apply lessons in structural engineering to create sound structures using building blocks such as K'Nex<sup>®</sup>.

The Hydrology team is creating a working model of the water cycle that shows water moving through a display, exhibiting evaporation, condensation, precipitation, and transpiration. The museum intends to use the model to help students visualize the stages of the water cycle.

The Windmill team is designing a replica windmill that measures the voltage created by a stream of air blown over a wind turbine. Students interact with the model by creating blades for the turbine to see how their designs impact the power output of the windmill.

These projects have the potential to meaningfully improve science and engineering education. By working with the museum, team CED hopes to aid in their efforts to teach inspiring and applicable lessons to young students.