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Physics is alive with sound and music

Summary: Sylke Boyd's "Physics of Sound and Music" class completed the fall semester with a project designed to challenge students' creativity, resourcefulness and knowledge, as well as to apply what they learned in the class.

(January 17, 2006)-Sylke Boyd's "Physics of Sound and Music" class completed their fall semester with a project designed to challenge students' creativity, resourcefulness and knowledge as well as to apply what they learned in the class. The assignment, given by Boyd, assistant professor of physics, asked students to make a musical instrument that could play five notes and be tuned. Students presented their projects to the class at the end of the semester.

"This general education requirement (GER) class is most often taken by students majoring in music, not necessarily students majoring in physics," shared Boyd. Although students in the class said it was not what they expected - they thought the course would focus on the physics of music, rather than on the physics of sound - they seemed very enthusiastic making and presenting their instruments.

Joel Adams, Fergus Falls, and Brian Kotila, Cokato, constructed a "drumbone," an instrument that appears to be a makeshift cousin of the trombone. They said they saw this drumbone on the Blue Man Group Web site.

Mike Helgemoe, Rochester, presented tunable rattles using Erlenmeyer flasks he borrowed from science labs, filled with beads, which he borrowed from Boyd, used for the rattle. Helgemoe said he was inspired to make this instrument "because I wanted it to be significantly different than other students' instruments." He based the concept on the popular Latin American percussion instrument, the maraca.

Students in Boyd's course learn concepts pertaining to the physical aspects of sound, such as propagation, human voice and hearing, musical temperaments and room acoustics. She has been teaching this class for two years.

Boyd said the class can benefit students in many ways. "Many who play or perform will hopefully gain a better understanding of how the instrument works, or show them a side of physics they might not know. For education majors, this class might provide ideas or demonstrations – little experiments -- students can take away and use in their careers."

To view the instruments visit the [Physics Sound and Music](#) site.

Photo: Mike Helgemoe, Rochester, displays his tunable rattles.

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