

ACOUSTICS2008/304
**Acoustics Modules Developed in the IIT Research Experience for
Teachers Program**

Ralph Muehleisen

Illinois Institute of Technology, Civil, Architectural and Environmental Engineering, 3201 S. Dearborn St.,
Room 228, Chicago, IL 60616, USA

From 2004-2008, the Illinois Institute of Technology (IIT) received funding from the US National Science Foundation (NSF) to institute a program to bring K-12 (primary and secondary school) teachers into University research labs for a seven week summer program where teachers work with an IIT faculty Research Mentor and develop an educational module for their students based on their mentor's research. The module's goal is to introduce students to engineering design concepts, utilizing scientific inquiry techniques, and incorporating an ethics component and a design project. Additionally, the modules must be linked to the Illinois State Board of Education Learning Standards. In 2005, a teacher developed a module for teaching high school algebra, geometry, and physics using musical acoustics, culminating with a woodwind instrument design project. In 2006, a teacher developed a module for a 3rd grade science class that explores the basics of sound and hearing, culminating in a noise control design project. This paper will present and discuss these two acoustic teaching modules. This project was supported by NSF grant EEC-0502174.