## Microcontroller/Environmental Sustainability Project

# Magic Flashlight

## Mission Statement

To redesign a prototype of the Magic Flashlight from Eye Ear IT, Inc. adding newer technology in a more ergonomic form, to expand the customer demographic.

## Synopsis

The first Magic Flashlight was originally developed as an educational aid for young children. It was designed to scan bar codes from specially made books that call on associated audio content stored within the flashlight.

Phase I of the project was to become familiar with microcontrollers and identifying a microcontroller suitable for the project's needs. It was imperative to take into account the physical constraints of the new device. A virtual prototype was created concurrently with the electronic breadboard hardware.

The team spent several weeks learning and gathering information on various microcontrollers. Once the appropriate microcontroller was chosen, the team was split into two smaller groups that kept in constant contact with each other. As a result, several SolidWorks designs were created, with each having an important segment that eventually contributed to an ideal prototype for the Magic Flashlight. Progress was made with the image capture, the writing of a program based on a microprocessor that was chosen and the enabling of wireless transmission using a different microcontroller.

Software to interface the camera with the microprocessor and then to obtain wireless transmission to a host computer was designed.

It is anticipated that hard coding will comprise the bulk of the Phase II research in 2011-2012.
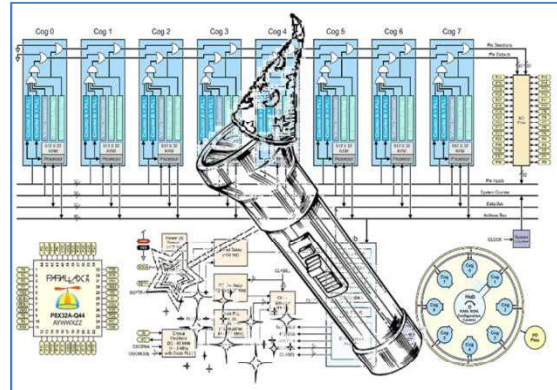
Ayodele Asaolu      University of Connecticut
Clifroy Henry       Norwalk CC
Benjamin Lamy       Northwestern CT CC
Courtney Collins    Naugatuck Valley CC