

Two electrical engineering student projects were awarded first place in the Lockheed Martin Design Award for Best Project at the Fall 2011 design showcase.

Titled "Harnessing Human Energy" and sponsored by Harris RF Electronics, the team members included electrical engineering students Jacob Huttel, Fernando Lara, Tuan Ngo, Clifford Pang and computer science and engineering student George Fouche. The team designed an unobtrusive way to capture waste energy from everyday human activity. The team fabricated an array of sixteen ceramic piezoelectric devices for mounting under the heel of a shoe. A high-efficiency circuit gathered and conditioned the low-power output of the piezoelectric devices in order to charge a lithium polymer battery, also mounted on the user's shoe. When fully charged, this battery could deliver 100mA of current at 3.3V. Their Harris RF Electronics technical adviser is Michael Vanderwege.

Titled "4 Carrots - The Fitness Regulator" and sponsored by entrepreneur, Jonathan Tabolt, the team members including electrical engineering students Jorge Calderon, Matt Quigley, Aaron Walters, and computer science and engineering student Bill Orosz. Parents are often in the position of controlling their children's overuse of video games. The team developed a device to monitor a child's physical activity and to award "carrots" for that exercise time which could be used to unlock a favorite video game. The 4 Carrots Fitness Regulator is the first prototype of Tabolt's dream to bring such a device to market.