

Student-designed device provides new way to track calorie burning

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Counting calories that burn through activity is a constant quandary. One can only run on a treadmill so long, watching intently as the pedometer reads out the number of calories melted during a session of exercise. Not to mention the question of how many calories are burned through basic daily movements and even during sleep.

But technology - and youthful ambition - is presenting a round-the-clock solution for those consumed with this calculation.

A group of Georgia Tech students has crafted a device that allows individuals to constantly compute the amount of calories they burn - even as they sleep.

"It's a completely converged device," said Garrett Langley, 21, a senior in the School of Electrical and [Computer Engineering](#) (ECE) who spearheaded the project. "It's a single unit that provides complete fitness monitoring and management."

Dubbed HappyHR, the instrument is a personal monitor that allows users to measure and compare day-to-day physical and caloric activity. The name is a reference to the euphoric feeling that follows an intense round of exercise - the "happy hour."

The small, rectangular-shaped instrument straps to the wrist or ankle, gathering data related to [heart rate](#) and exercise. The information is then transferred via Bluetooth to a PC, where the statistics can be analyzed

through Web-based software.

Although the device focuses on calorie counting, Langley envisions more thorough health applications including respiratory and glucose monitoring.

This tool began as a senior design project for Langley, who viewed a marketplace that was lacking such technology coupled with a results-hungry populace eager for more health information. An aspiring entrepreneur, he also found that it provided an organic way for him to develop a business.

An avid runner, Langley himself was frustrated at the challenge of quantifying fitness results.

"I saw that there was a huge gap in the market," he said. "There are simple \$30 pedometers, and there's nothing in between that and \$400 health monitors."

Comparatively, HappyHR should carry a \$100 price tag if it becomes commercially available.

Shortly after conceiving the idea, the development process became an interdisciplinary endeavor incorporating several colleges at Georgia Tech.

Fellow electrical engineering student John Hamilton, biomedical engineering students Stephen Mann and Nathan Kumar and industrial design student Stuart Lawder all contributed their expertise to actualizing Langley's concept.

The result: a deft and subtle device that resembles a compact MP3 player more than fitness monitoring technology.

The project, and the fortitude behind it, has impressed Steve Chaddick, Tech alumnus and chairman of the ECE Advisory Board. Chaddick has served as a mentor to Langley and his team, lending his advice to both the design and business plan process.

"It's a terrific opportunity to promote what I believe in engineering education," Chaddick said. "We should be teaching the 'why' before the 'what,' so to speak. It's been very satisfying for me personally."

Langley is finalizing the HappyHR prototype and beginning discussions with manufacturers. His goal is to make HappyHR commercially available some time this fall.

"Ideally, this could change the way America stays in shape," Langley said. " 'Stay fit and be happy' is the slogan. This is going to motivate people to exercise more and be happier."

Source: Georgia Institute of Technology

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