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'Cool' product: WKU students create wearable technology that heats and cools

By DON SERGENT dsergent@bgdailynews.com 12 hrs ago

BioTek Inc. co-founders Jacob Haskamp (left) and Liam Seymour pose for a portrait Friday at the downtown Starbucks.

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Young entrepreneurs Liam Seymour and Jacob Haskamp of Bowling Green have a really cool product. Or maybe it's totally hot. It sort of depends on the season.

Seymour, who has studied computer science and electrical engineering at Western Kentucky University, and Haskamp, an entrepreneurship major at WKU, have melded their skills to create a company called BioTek Inc. and a product called AirBox that they hope will make life more comfortable for a host of customers.

The two business partners, sitting in a coffee shop last week, demonstrated a prototype of the AirBox, which is basically a cellphone-size heating and cooling unit that attaches to clothing and circulates cool or hot air.

"I got the idea when I was at my grandma's house," explained Haskamp, a 20-year-old sophomore from Florence. "The house was real hot, and I thought it would be kinda neat to wear a jacket or something that would cool you."

That fleeting thought from eight months ago started the gears turning in Haskamp's entrepreneurial brain, leading him to enlist the help of Seymour and come up with a product the two are nearly ready to put on the market.

"I met Liam at the WKU Makerspace," a learning environment where people come together to create, invent, build and explore, Haskamp said. "I told him I needed somebody who knows more than I do about engineering."

Seymour, a Warren East High School graduate who has been doing computer programming since he was 10, had time to fiddle with his new partner's idea while taking a year off from classes.

Using his electrical engineering background, Seymour used the Peltier effect – the presence of heating or cooling at an electrified junction of two different conductors – to create what he calls a concept demo of the product. He has refined that and is nearly ready to unveil the "alpha prototype" of the device.

Seymour, who works at the WKU Makerspace, was able to use a 3D printer and soldering tools to put together a device that uses two small fans to circulate the hot or cool air.

"It was all theory until I saw that concept demo actually work," Haskamp said.

Seymour, 22, explained that the AirBox connects to specially designed T-shirts or compression shirts and will circulate the heated or cooled air through the fabric. He said the AirBox can heat or cool by as much as 30 degrees.

"The idea is for the air to flow through channels that are woven into the fabric," he said. "The goal is to have clothing items that are completely washable."

Other heated clothing products are on the market, but Haskamp said those normally use heating coils that aren't as efficient as the product he and Seymour have developed.

With everyone from preteens to grandparents carrying mobile devices these days, Haskamp believes there is a market for the wearable mobile device he and his partner have developed.

“Is this the time for this kind of technology?” he asked. “I think so. My friends love it. We’ve had a lot of support from people my age.”

Haskamp, who said he has already invested about \$8,000 of his own money into AirBox, and Seymour are taking a risk with this venture; and one WKU staff member who knows them isn’t surprised.

“They’re very ambitious, and that’s what’s supposed to happen at a university,” said Anne Heintzman, a professor in WKU’s School of Professional Studies who helped get the Makerspace started. “I’ve known Liam longer. I hired him to help at the Makerspace. There’s nothing he can’t do. He can put together a 3D printer or just about anything.

“Jacob is as driven by entrepreneurial spirit as Liam is by technology. It takes a lot of time, effort and dedication to actually make something like this happen. I think this (AirBox) is a good beginning. The product could really take off. I don’t think they’ll be terribly daunted if it doesn’t.”

The partners should know soon if AirBox will be a hot item or be met with a cool reception. They have formed the corporation and applied for a patent, so they are nearly ready to test the marketplace.

“The next step is finishing the alpha prototype and then getting funding,” Haskamp said.

He said the plan is to launch a crowdfunding campaign in March on the Kickstarter website.

“Our goal is to raise \$40,000,” Haskamp said. “That’s what we need to get started. Our goal is to start shipping products in January of 2020.”

Haskamp said the device and two clothing items (T-shirts or compression shirts) will cost \$300, although he believes it will eventually be cheaper. He said the product has applications for construction workers, athletes and others.

“I’ve talked to a lot of people about the product, and every person I talk to has come up with different ideas for it,” Haskamp said. ^{<html><head></head><body></body></html>} ~~It~~ really can be used by everybody.”

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