

Sunday, Jul. 13, 2008 Jennifer Thomas

## BELLEFONTE START-UP COMPANY HELPS OTHERS GET SOME REST Patent pending on SleepPhones

BELLEFONTE — They're pajamas for your ears — one local couple's invention to counter sleepless nights.



CDT photo/Mark Johnston

**AcousticSheep CEO Dr. Wei-Shin Lai sews earphones into fabric to make a set of SleepPhones at her home in Bellefonte. A patent is pending on device, which is a set of speakers that help lull people to sleep.**

The Bellefonte-based start-up business AcousticSheep LLC is finding a growing interest in its SleepPhones, a hand-crafted system to help people fall asleep without drugs, said company CEO Dr. Wei-Shin Lai.

Made from soft fleece, in lavender or gray, the Sleep-Phones rely on a set of tiny speakers and something known as the binaural beat to lull you to sleep, Lai said. A special audio track of nature sounds is included as part of the set.

The binaural beat relies on two different audio frequencies to create delta waves — or deep sleep. One frequency is sent to each ear, and when they combine, the brain processes it and reacts by producing a new brainwave associated with sleep.

"If you control the frequency in each ear, you can control the brain," Lai said, adding that a 30-minute session of relaxing sounds is typical. "By the end of it, most people are asleep."

A separate audio track, such as chirping birds, is included to return the brain to beta waves, those associated with being awake.

It all started in January 2007, when Lai was a doctor practicing in Stamford, Conn. — and on call. After waking to take patient calls, she found she had difficulty falling back to sleep.

"That's why we decided to invent something to help me sleep," she said.

Lai and her fiancé, Jason Wolfe, turned that idea into a business venture that has taken on a life of

its own. A patent for the SleepPhones is pending.

It's the first foray into business for both. She's a doctor by day, and he's a software developer for Penn State.

"It's very much a learning process," said Wolfe, the company's chief technical officer. "It's very much the American dream."

SleepPhones have been sold via the couple's Web site, [www.sleepphones.com](http://www.sleepphones.com), to customers on every continent except Antarctica, Lai said. It's offered at a price of \$59.95. Locally, the product also is for sale at Tadpole Crossing in downtown State College.

"It's really great to go out there and see your product in the stores," Wolfe said.

It's also available for purchase on the National Sleep Foundation's Web site. And Dr. Michael J. Breus, a sleep specialist and WebMD's sleep expert, said he plans to promote the product in the future.

"What I love is when people get motivated enough to solve their own problems," he said.

Breus said he's tested the product himself, but added he doesn't typically have problems sleeping. He has recommended it to some of his patients.

"They all said it was very relaxing and they were able to fall asleep a little bit faster," he said. "It has been pretty effective."

Breus, who also has a doctorate, said there haven't yet been any clinical studies using the binaural beat to treat sleep disorders, such as insomnia, but he thinks there is a real science behind the premise.

"I think this will be an effective tool for a lot of people who don't have an official diagnosis of insomnia," he said. "This is a perfect thing to try first."

Sleep deprivation affects all aspects of life. It can weaken immune systems and can contribute to weight gain, he said.

He said the advantages of the SleepPhones is that it is non-pharmaceutical and can be taken just about anywhere by users. For those waiting to see a specialist, it may provide relief.

"They may be able to solve their own problem," he said.

There are numerous testimonials from satisfied customers on the couple's Web site. Lai said she never expected to hear so many stories of how the product has changed people's lives.

"That's one of the reasons I became a doctor was to help people," she said.

SleepPhones also can help block out a partner's snoring, a noisy neighbor or distract those with anxiety issues or stress, she said.

"It gets you into a good rhythm," Lai said.

The first challenge was coming up with a practical design. To take advantage of the binaural beat, one must use headphones, which in many cases is impractical for someone trying to get comfortably to sleep, Lai said.

She made the first prototype by hand. She created a headband with a jack in the front where iPods and CD players can be plugged in. The couple found a company that could produce tiny speakers — about the size of a nickel — that provide decent sound.

Their design allows wearers to adjust the speaker placement for maximum comfort.

At first, Lai was sewing the products by hand. "After a while we just got a sewing machine, and that's how we ended up doing them a little bit faster," she said.

These days, four part-time employees produce about 100 sets of the SleepPhones each week. That's double what was being produced in 2007.

Lai said she double checks the product and is working on developing new versions.

She and Wolfe plan camping trips to collect sound for their audio offerings, often going out to record sounds such as thunderstorms and the recent cicadas.

Wolfe said that they wanted realistic sound effects and natural sounds but didn't realize how much noise pollution there is locally.

For Lai and Wolfe, the business presents a new challenge.

"We've always wanted to start our own business just for fun and to make some money on the side," she said. "It's fun, and I really enjoy learning things."

They've sought assistance from Penn State's Small Business Development Center, something Lai said has helped them develop connections within the Centre County community and beyond.

Linda Feltman, a business analyst, said the couple contacted them after being in business for about six months. She said the SBDC suggested marketing ideas and other ways to help streamline the manufacturing process.

"I wish that all of my clients were as receptive as they have been. Nearly every suggestion I have made to them they have taken under consideration and run with it," she said.

Lai said the ultimate goal is to grow the business so it's self-sustaining. She said she wants to remain a practicing doctor, but Wolfe may eventually work on the venture full-time.

"We may or may not sell it to a bigger company," she said.

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