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# The Measured Life

**Do you know how much REM sleep you got last night? New types of devices that monitor activity, sleep, diet, and even mood could make us healthier and more productive.**

By EMILY SINGER

On a quiet Wednesday night in April, an unusual group has assembled in a garage turned hacker studio nestled in a student-dominated neighborhood outside Boston. Those gathered here—mostly in their 20s or 30s and mostly male—are united by a deep interest in themselves. They have come to share the results of their latest self-experiments: monthlong tests of the Zeo, a consumer device designed to analyze sleep.

The group is part of a rapidly growing movement of fitness buffs, techno-geeks, and patients with chronic conditions who obsessively monitor various personal metrics. At the center of the movement is a loosely organized group known as the Quantified Self, whose members are driven by the idea that collecting detailed data can help them make better choices about their health and behavior. In

**CLASS DISCUSSION MODE**

Me    Others

Highlights    ▢    ▢

Annotations    ▢    ▢

Julie Wilner (right), product director at Basis, uses the startup's device (above) to track heart rate, body temperature, movement, and sweat levels. The data is analyzed to determine activity levels and calories burned throughout the day. Wilner, who is trained as a nurse, hopes this daily feedback will inspire people to be more active.

cycles. The device consists of a soft headband with a fabric sensor that wirelessly transmits EEG data to a bedside monitor. A programmable alarm clock wakes the wearer at the optimal phase of sleep. And each night's data can be uploaded to a computer, where users can study how their sleep is affected by environmental factors such as weather, light, and more.

Sanjiv Shah, a longtime insomniac who participates in the Boston group, believes that wearing orange-tinted glasses for several hours before bed makes it easier for him to fall asleep. (The theory is that the orange tint blocks blue light, which has been shown in both human and animal studies to influence circadian rhythms.) To quantify the effects, he used not only the Zeo but also a thumb-size device called the Fitbit, which incorporates an accelerometer that measures movement, and a camera trained on his bed to record his sleep for a month. His results: without the glasses, he took an average of 28 minutes to fall asleep, but with them he took only four.

The experiment has an obvious flaw: Shah knows when he is wearing the glasses, and he believes they work, so the placebo effect could be responsible for their success. Matt Bianchi, a neurologist at Massachusetts General Hospital who spoke at the get-together, says no large-scale studies have shown that orange glasses improve sleep. (By the end of the evening, plans for a group experiment to test the technique were under way.) But self-trackers say the idea

of reproducing the results in scientific tests misses the point. The glasses clearly work for Shah. And an $8 pair of plastic glasses is certainly preferable to sleep drugs as a way to gain that benefit.

As Gary Wolf, a journalist and cofounder of the Quantified Self, puts it, "It's a trial that begins with one very important person: yourself."

Mention this in class,
May spark discussion

**SELF-HACKING HEAVEN**

Over Memorial Day weekend, approximately 400 hackers, programmers, designers, engineers, and health-care professionals gathered at the Computer History Museum, in the tech mecca of Mountain View, California, for the first annual Quantified Self conference. Attendees showed off fitness monitors, apps to gather and display data, and even a set of sticker sensors with embedded accelerometers to detect movement, which are designed to be stuck on toothbrushes, water bottles, or a dog's leash.

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Answer Last Question Asked

Me  Others

Highlights ☐ ☐

Annotations ☐ ☐

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> Instructor: What does this paper indicate that must be available to make self-tracking widespread?
>
> Possible Answers:
> 1. Cheap, dependable, and wearable sensors (41)
> 2. Inexpensive, lower-power wireless transmitters (41)
> 3. Networks to aggregate and share data (43)
> 4. Positive results, for example, someone discovering "standing on one leg for eight minutes a day helped them sleep" (45)
> 5. Integration to social network and gaming (45)

# IS 282 Class Rankings

**Current (updated hourly)**

Last Week

Last Month

Quarterly

+ 1.  Tim Gallati
+ 2.  Dan Phipps
+ 3.  Michael Qiu
+ 4.  Hermione Granger
+ 5.  Harry Potter
+ 6.  Stewie Griffin
+ 7.  Josie Bruin
+ 8.  Joe Bruin
+ 9.  Bart Simpson
− 10. Ron Weasley

View:

1-10

11-20

21-30

| | |
|---|---|
| Average Hours of Reading: | 1.3 per week |
| Average Exam Score: | B+/A- |
| Number of Postings: | 7 |
| Positive Ratings: | 42.0% |

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| J. Leno | 101 | CSUN | Soc 2 | $15.00 |
| H. Potter | 5 | UCLA | INF STD 282 | $22.50 |
| T. Gallati | 1 | UCLA | INF STD 282 | $62.95 |
| J. Bruin | 8 | UCLA | INF STD 282 | $8.99 |
| R. Weasley | 291 | UCLA | INF STD 282 | 9 ¾ cents |

**+**

Questions?