

## DEMONSTRATION: HHS IDEA LAB – WEARABLE ALCOHOL BIOSENSORS

### THE CHALLENGE

#### ALCOHOL SENSOR

- **The Challenge:** To produce a prototype of a sleek, unobtrusive wearable capable of monitoring blood alcohol, non-invasively, and in real time. Such a device would significantly advance current alcohol monitoring capabilities. We welcome creative approaches -- surprise us!
- **The Need:** Alcohol consumption can impact health and well-being, safety, and social behavior. Self-report of alcohol consumption is often unreliable for research, so scientists would benefit greatly from a source of more accurate data in order to study alcohol-related health outcomes, disease progression, treatment efficacy, and recovery. A wearable alcohol monitoring device could have consumer appeal as well; much like counting one's steps, this information could help individuals make better health choices.
- **The Intent:** To give researchers additional tools for studying the effects of alcohol and to give consumers valuable personal data.
- **Criteria:** Following functional testing by NIAAA, judging will be based upon innovation, accuracy, specificity, quantification, detection, real-time approximation, marketability, data capture, data interpretation/communication, and data security (not necessarily in this order).

### THE WINNER

“BACtrack SKYN makes tracking your drinking easy. It measures the alcohol coming from your skin and gives you an estimate of your alcohol level in real-time. No more guesswork.”

<https://www.bactrack.com/pages/bactrack-skyn-wearable-alcohol-monitor>

**BACtrack and The Foreseeable Future:** “The BACtrack S80, Element, and Trace meet the requirements of the Department of Transportation/National Highway and Traffic Safety Administration for a personal breath alcohol screening device. Both Element and S80 have passed DOT/NHTSA testing. Long recognized for excellence in design and prevision, BACtrack was the first company ever to receive U.S. FDA 510(k) clearance to market breathalyzers to consumers.”

Because of this, BACtrack is already marketing its breathalyzers to health purveyors, clinicians, law enforcement and the consumer. The BACtrack Skyn is planned to follow this model, bring more accurate data to the consumer, the therapist, and potentially the clinician. This will allow the toolbox of wearables to expand, making the individual more capable of understanding just how alcohol can affect sleep, anxiety, depression, and other conditions.

## THE IMPACT

### **The Research Community:**

The ability to track without stigma increases the research community's ability to create representational cohorts, and to collaborate with others (institutions or agencies, public and private) through co-investigations hypothetically involving returning veterans, underserved populations, athletes, and disease communities. This could lay the groundwork for discovery of new therapies, treatments, and cures, as well as new policies regarding safety and health.

### **The Consumer Market Place:**

With companies, such as BACtrack and our 2nd place winner MILO INC., poised to bring the devices to market in 2017, not only will the research community have access to data, but the consumer, from individual to therapist, will have access to data that will be able to inform how alcohol is affecting health. This includes safety concerns from parents' perspectives, college age activities, and other aspects of daily lives.

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**Presenter Bio:** F.L. Dammann is a Special Projects Lead for the National Institute on Alcohol Abuse and Alcoholism (NIAAA), currently co-lead on the National Search for a Real-time Wearable, Non-Invasive Blood Alcohol Biosensor. As a facilitator and innovator for various organizations, from theater companies to NGOs, and now the NIH, he looks to find, create, and connect for solutions to challenges for the greater good.

**About the National Institute on Alcohol Abuse and Alcoholism (NIAAA):** The National Institute on Alcohol Abuse and Alcoholism (NIAAA), part of the National Institutes of Health, is the primary U.S. agency for conducting and supporting research on the causes, consequences, prevention, and treatment of alcohol abuse, alcoholism, and alcohol problems. NIAAA funds the National Consortium on Alcohol and Neurodevelopment in Adolescence (NCANDA) to determine the effects of problematic alcohol use on the developing adolescent brain and examine brain characteristics that predict alcohol use disorder. NIAAA also disseminates research findings to general, professional, and academic audiences. Additional alcohol research information and publications are available at [www.niaaa.nih.gov](http://www.niaaa.nih.gov).

**More Info:** <https://www.nih.gov/news-events/news-releases/niaaa-selects-winners-its-wearable-alcohol-biosensor-challenge>