

# ABE 270 Intro to Biosensors & Mobile Health

TIER TWO GENERAL EDUCATION (NATURAL SCIENCES)

FIRST OFFERED IN SUMMER II, 2017

Several types of biosensors have become quite commercially successful in the past couple of decades, including glucose meters, pulse oximeters, and pregnancy tests. Recently, more advanced types of biosensors are being investigated and commercialized, to detect pathogens from food/water as well as animals/humans, to provide comprehensive blood test at home, etc. Major breakthroughs in achieving high sensitivity and specificity have been achieved with the use of lab-on-a-chip and nanotechnology. Towards easy-to-use, handheld, and daily monitoring of health conditions at home, use of Arduino, Raspberry Pi, 3D printing, smartphone, and other wearable devices are being investigated. Together with cloud computing, these efforts constitute towards a novel concept of mobile health or mHealth, which will revolutionize the future of health care.



Glucose meter



Pulse oximeter



Pregnancy test



Nike Fuel Band



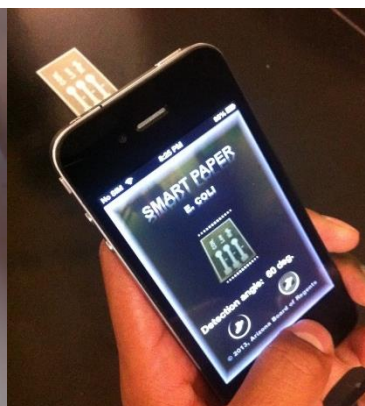
Apple Watch



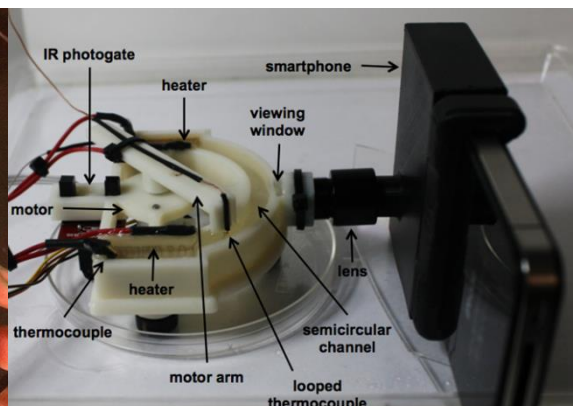
Raspberry Pi



Smartphone blood assay



Smartphone food/water assay



Smartphone DNA analysis

Contact: Professor Jeong-Yeol Yoon, [jyyoon@email.arizona.edu](mailto:jyyoon@email.arizona.edu), 621-3587, <http://biosensors.abe.arizona.edu>