Located on the 3rd floor in the Life Science Laboratories, the Mobile Health Sensing & Analytics Laboratory (mHealth) provides state-of-the-art testbed for performing mobile health experiments at scale, and develop robust and personalized mHealth detectors.

The facility accepts samples and will perform requested analysis. We offer training to users to conduct experimentation for use on a fee for service basis to both internal and external researchers, academic or industry based. Following an initial consultation, covering experimental parameters, training and access is arranged through the director.

**ACCESS**

To request access, training, or additional information please contact Deepak Ganesan at dganesan@cs.umass.edu or Prashant Shenoy at shenoy@cs.umass.edu.

Our rates are competitive and tiered based on needs and usage. Visit our website at umass.edu/ials/mhealthlab for current listing.

**TRAINING**

Training for new users consists of:
- Lab safety training
- Operation of the instrument and associated software
- Use of data analysis software
- Exporting or presenting data
- Clean up and shutdown of the instrumentation

Once the training is complete, researchers may schedule their experiments through the directors of mHealth Lab (Deepak Ganesan or Prashant Shenoy) or on line through FOM (Facilities Online Manager) at fom.umass.edu/fom

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Research and Innovation to Translate Basic Science into Product Candidates

Develops Algorithms and Processes for Large Scale Wearable Sensor Networks

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Designed to provide a state-of-the-art testbed for performing mobile health experiments at scale, and develop robust and personalized mHealth detectors. Currently, a chasm separates the complexity of analytical methods that are needed to achieve clinically valid measures of complex health targets over varied user populations, and the stringent computational and energy constraints imposed by wearable devices. mHealthLab is designed to bridge this gap and enable continuous personalization of detection models to individual users through a design methodology that takes into account the constraints and opportunities of wearable-smartphone-cloud platforms. Our goal is to design a personalized mobile healthcare system that obtains timely information from individuals to personalize detectors, and continually re-learns how to split sensing and computation across diverse devices to provide accurate real-time health and wellness information.

mHealthLab is intended to be a transformative wireless health research testbed with more than a hundred users with mobile phones and wearables, that will allow efficient access to a user base to allow continuous design of mHealth detectors for targets such as eating, smoking, drinking, exercise, stress, and others.

The software infrastructure provided by mHealthLab includes:

- Subject recruitment tools that will solicit potential participants from the pool of users.
- Data collection methods to continuously collect data from the phone, either through the LTE network or via WiFi access points on campus.
- Access to de-identified data for specific research purposes.
- Access to a variety of plugins to obtain different types of sensor data from the mobile phone or specific health accessories.
- Data storage and access methods on a private cloud.
- Inference toolkit to extract specific high-level inferences from raw sensor data including activities, social interaction patterns, stress, sleep, eating, drinking, and other behaviors.
- Web-based visualization to digest multi-modal multi-user streams.

EQUIPMENT

- 500-1000 user testbed involving wearable wristbands and mobile devices

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MOBILE HEALTH SENSING & ANALYTICS LABORATORY

A significant portion of core equipment has been purchased through MLSC grant funding support.