



## VALENCELL BIOMETRICS LAB

### OVERVIEW

The Valencell Biometrics Laboratory (VBL) is a highly-equipped exercise physiology facility in Raleigh, N.C. The lab coordinates internal and external clinical validation trials, executes validation testing in the lab and field and contributes to the research and development of new technology related to physiological biometrics as applied to exercise, medical and military situations. Certifications across the lab team include Healthcare Clinical Research Specialist, ACSM Certified Exercise Physiologist, Certified Personal Trainer, NSCA Certified Strength and Conditioning Specialist and more. VBL provides the following testing and consulting services for research and development of health and fitness metrics for implementation into industry.

### SERVICES OFFERED

#### Wearable Technology Development and Validation

VBL specializes in wearable technology development and assessment of device accuracy and reliability. We handle both consumer and medical-grade wearable devices. Metrics typically assessed include but are not limited to: heart rate; heart rate variability; blood pressure; caloric expenditure; oxygen utilization; substrate (carbohydrate/fat) utilization; temperature; respiration; blood glucose; blood lactate; oxygen saturation; and altitude simulation.

Internal research to guide research and development efforts may include:

- Assure data and metrics are valid and reliable
- Guide research and development with ongoing data collection
- Recruitment and organization of beta testers for feedback of product during the research and development process
- Design of methods to assess metrics during the R&D process
- Statistical analysis and evaluation
- Organization of data and results for presentation, marketing, and investor support
- Internal trials can be performed at your facility, at our laboratory and/or in the field

Once internal trials for validation and reliability are complete, external trials can be initiated. VBL can coordinate external research efforts by:

- Arranging for trial location or work with sites already in place
- Providing representation during data collection to assure proper methodology is
- Developing site contract and point of contact during development, data collection and publication for conference and journal submission
- Analyzing and presenting result





## Research Studies

Beyond wearable device testing, VBL is fully capable of a variety of human research study implementations. Perhaps you already have a research study designed but need the lab space and staff to carry out the testing, or simply need an unbiased external testing site – our lab may be able to help. Our team has backgrounds and experience in both clinical and academic research study design and implementation.

The lab is accustomed to implementing a wide variety of protocols from high intensity exercise to activities of daily living, both in-lab and field-based. We have worked with all types of participants and are accustomed to modifying procedures as needed for a given population. The ability to customize testing protocols to match the intended user experience is a key characteristic of VBL.

## Consulting

Whether you need the testing and implementation conducted or simply need some advice, we are here to help. The VBL offers consulting for research and development of health and fitness metrics for implementation into industry. The laboratory can provide guidance on metrics for any application including mobile health and fitness, validation trials, protocol design and physiological assessment in clinical settings. Guidance can take the form of simple presentation to complete development of internal and external trials for research and development, validation and implementation.

## EQUIPMENT AVAILABLE

VBL has the following equipment available for use. Additional equipment can be procured as needed. The lab also has access to a nearby pool for any in-water testing needs. The lab staff are also CPR/AED certified through the American Red Cross and we have an AED and first aid kit on site in the lab.

### Reference Testing Equipment:

- Polar H10 Chest Straps
- Automatic and Manual BP Cuffs
- Cadence Sensor
- SpO2 Monitor
- Blood Glucose Monitor
- Blood Lactate Monitor
- Thermometer
- Core Temperature Monitor
- Altitude Simulator
- Modus StepWatch4
- Spotlight (mimic sunlight indoors)

### Gym Equipment:

- Epic Treadmill (2)
- Livestrong Stationary Bike
- Dumbbells
- Kettlebells
- Medicine Balls
- Slam Balls
- Yoga/Exercise Ball
- Rowing Machine
- Bench
- Mats
- Aerobic Step Bench
- Jump Ropes

