

Workshops



Agile Science Techniques for Digital Health
Robert Furberg, PhD, RTI International

Digital Health Regulations and the IRB

Jeremy Block, PhD, Venture Catalyst

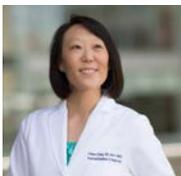


Digital Health in the UNC Research Context

Deborah Tate, PhD, CHAI Core

Digital Health App Development

John Reites, THREAD Research



Digital Health Devices
Arlene Chung, MD, MHA, MMCi
UNC School of Medicine



Digital Health Data Management

Lukasz Mazur, PhD, Prithima Reddy-Mosaly, PhD, Gregg Tracton

Collaboration with UNC Department of Computer Science

Arlene Chung, MD (UNC School of Medicine) and Dr. Shahriar Nirjon (Department of Computer Science) are collaborating to use an E-Shield sensor platform to detect multiple sensory streams of data simultaneously from a patient.



CaDHRI connected Computer Science students with UNC Health Care to develop applications for the Amazon Alexa voice controlled personal assistant. We supplied the Amazon Echo from our device collection. The students developed two skills:

- 1) **Blood Draw:** an app to help physicians with phlebotomy
- 2) **Parent Reference:** a pediatrics patient quiz app

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International Inhaler Studies

Delesha Carpenter (Assistant Professor in the Division of Pharmaceutical Outcomes and Policy) has started an international collaboration to develop a new youth-centered user-friendly device to assess children's inhaler technique. CaDHRI provided her team with aerosol inhalation monitors (AIMs). Her team gathered youth feedback on an existing inhaler technique device using AIMs. Dr. Carpenter has been coordinating to gather data on youth's assessment of the device's usability with these devices in the U.S., U.K., and Australia.



CaDHRI purchased 10 Fitbit Aria Wireless Scales for a behavioral intervention study by Dr. Deb Tate and a near infrared (NIR) camera for Dr. Greg Lewis for a heart-rate measurement study.

Dr. Deborah Tate (Nutrition and Health Behavior and Lineberger Cancer Center member) is leading a study to identify optimal timing, need and content of intervention messages that promote adherence to self-monitoring behaviors. The study is using a just-in-time adaptive intervention model (JITAI).

Phase I has examined predictors of weighing and activity tracking among young adults using Fitbit data and a smartphone app to query them several times per day about their behaviors, moods, and contexts. Phase II will be a larger study of 120 young adults.

Dr. Greg Lewis (Department of Psychiatry) has been designing and testing a noncontact system for measuring heart rate in human subjects for research and health applications. One critical weakness in the current system is its poor performance with the subset of the population that has the darkest skin tones.

Therefore, this study uses a near-infrared (NIR) enhanced camera to test whether use of the NIR part of the light spectrum improves system performance to make it suitable for all subjects.