

# Advancing Wearable Health with Smart Skin Sensors and Cloud Analytics



Todd Coleman

Co-Director , Center for Perinatal Health Associate Professor ,  
Bioengineering

## CURRENT RESEARCH

### Non-invasive temporary tattoo electronics

At all stages of life there are risks and questions concerning how our bodies are functioning. If there were a way to monitor these stages, would it bring about a healthier and more productive society? Dr. Coleman and his researchers at Neural Interaction Lab believe so. His vision is to use technology to not only allow the human to be more productive, but also to become more human. Although health monitoring systems are already used in hospitals and medical facilities, they are often large, rigid and confined to the hospital space. Dr. Coleman and his team have designed wearable, flexible electronics that bend and stretch with the skin. Dr. Coleman and his team are merging technology with health to enable more productive, functional lives. Through multidisciplinary research, they are improving clinical outcomes across all stages of life: pregnancy, newborns, chronic diseases and aging.

- They have wed materials science with bio-electronics to develop an "electronic temporary tattoo" that can read vital signs unobtrusively.
- By combining tools from applied mathematics and statistics, computer science, bioelectronics, and medicine, their innovations allow them to monitor and better manage health challenges from pregnancy to chronic disease management to aging.
- They are also innovating at developing fast, scalable analytics algorithms that can take human vitals, along with other contextual information, and transform them into a succinct and dynamic statistical snapshot of the status of humans as they interact in their environment.
- By carefully developing unobtrusive applications to obtain a human's status...

## AFFILIATION

 University of California, San Diego

## EDUCATION

- Ph.D., in Electrical Engineering and Computer Science, 2005, Massachusetts Institute of Technology
- M.S., in Electrical Engineering and Computer Science, 2002, Massachusetts Institute of Technology
- B.S.E., in Electrical Engineering and Computer Science, 2000, University of Michigan

## AWARDS

- Bill & Melinda Gates Foundation Challenge Grant

## RESEARCH AREAS

Health IT, Regenerative Medicine, Technology, Electronics / Sensors

## FUNDING REQUEST

Your funds will help bring together researchers from many different perspectives - to collaborate on transformational improvements in health. Undergraduate engineers will work with bonafide physicians to address unmet clinical needs, or Ph.D. electrical engineers will team with neonatologists developing sensors uniquely tailored to the physiology of the newborn in the ICU. Your donations will enable a diverse, cross-disciplinary environment to develop radical solutions to our societal challenges.

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info@benefunder.com / (858) 215-1136

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