CHOT AT PENN STATE
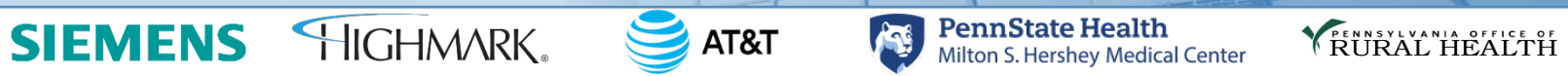# NEWSLETTER
MAY 2017

Penn State National Science Foundation Center for Health Organization Transformation (Penn State CHOT)
An Industry-University Cooperative Research Center

SIEMENS **HIGHMARK.** **AT&T** **PennState Health** Milton S. Hershey Medical Center **PENNSYLVANIA OFFICE OF RURAL HEALTH**

SUMMER STUDENTS BRING RESEARCH TO LIFE

Penn State's National Science Foundation Center for Health Organization Transformation (CHOT) has a mission to advance transformation in health systems through applied transdisciplinary research. The Industry-University model provides a conduit to implement the transformational strategies identified in research. Penn State CHOT's current industry partners include Siemens, Highmark, AT&T, Hershey Medical Center and the Pennsylvania Office of Rural Health.

In an effort to translate basic research into applied healthcare solutions, a team of Penn State students is working to create usable apps that can be downloaded to a mobile device and integrated into the healthcare operations of existing CHOT partners.
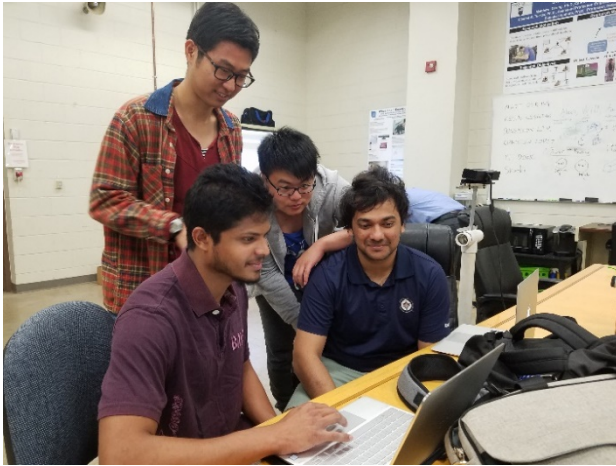
HEART RATE AND BIOMETRIC DETECTION TECHNOLOGIES

There is already research on detecting people's heart rates via video feedback. Most of the current technologies focus on extracting data when the subjects or the camera is stationary. However, this is not the scenario in the world, as everything and everyone is subjected to some kind of a motion. This becomes more challenging when the subjects are moving (dynamic environment) or in environments prone to motion artifacts like camera shaking. Given the prevalence of mobile hardware, Penn State CHOT aims to provide practical solutions that advance Population Health and Telehealth applications.

DETECTING HUMAN EMOTIONS FOR PERSONALIZED TELEHEALTH WELLNESS

Affective computing is the study and development of systems and devices that can recognize, interpret, process, and simulate human affects. Using data from affective computing will enable healthcare providers to actively collect data via telehealth systems.

"Sensing Systems for Personalized Telehealth Wellness Management", one of last year's CHOT projects, concluded that advancements in network infrastructure is opening the possibilities for real time acquisition and storage of patients' data that can be integrated into physicians' workflow.

CHOT students are translating this research into a real life application that will help detect human emotions using facial cues like facial key point movements, facial muscle movements and facial action units. The information gathered can help provide more information about the wellness of an individual such as estimating the level or changes in pain.

2017 – 2018 PENN STATE CHOT PROJECTS

As the summer students work to materialize research into real world solutions from last year's CHOT projects, new projects are finalized for the 2017-2018 cycle that will include faculty, graduate students, and industry partners.

The collaborative, interdisciplinary research includes research based here at University Park and collaborations with other CHOT sites that focus on Population Health, Analytics and Innovative Technology, and Access to Care. More details will be available soon at chot.psu.edu.

CHOT University Sites

TEXAS A&M UNIVERSITY.
Georgia Institute of Technology
PennState
UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
FAU FLORIDA ATLANTIC UNIVERSITY

The mission of the Penn State National Science Foundation Center for Health Organization Transformation (CHOT) is to advance transformation in health systems through applied transdisciplinary research.

CHOT **PennState College of Engineering**

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CHOT.PSU.EDU