Other Conference Item

Teaching Appropriate Medical Device Design to Engineers

Author(s):
Karlen, Walter

Publication Date:
2017-05

Rights / License:
In Copyright - Non-Commercial Use Permitted ➔
Teaching Appropriate Medical Device Design to Engineers

Walter Karlen, Mobile Health Systems Lab, Institute of Robotics and Intelligent Systems, Department of Health Sciences and Technology, ETH Zurich

Since the introduction of the Sustainable Development Goals in 2015, it became clear that many of the 17 ambitious goals could not be reached without the support of technology. These health goals to reduce mortality rates from communicable and non-communicable diseases require better tools for accurate diagnosis, monitoring, treatment, and prevention. Although the concepts of appropriate health technologies have been promoted by the WHO since the late 1970’s (C.A. Lomax 1980), there is still a mismatch in medical devices that can provide effective and efficacious performance within an economic, cultural and environmental context (WHO 2010).

At ETH Zurich we offer since spring 2016 an appropriate health system design course to sensitize engineering and health science students to the challenges of developing user- and application-centered medical technologies. The students develop in flipped classrooms the concepts of system costs, performance, usage, and durability. Projection upon an unfamiliar persona is used from the beginning to practice empathetic design approaches, while shifting the focus from technology innovation to system assessment and management. The course not only promotes the principles of appropriate technology, but also application to and evaluation of current priority medical devices, training a new generation of biomedical device developers.
