

SEMINAR SERIES

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DESIGNING ASSISTIVE DEVICES FOR DEVELOPING WORLD: LEARNINGS FROM THE DEVELOPMENT OF ORTHOTIC KNEE JOINTS

Featuring Dr. Ganesh Bapat
University of Nebraska at Omaha



November 15, 2019 | 12:00 - 1:15 pm | BRB 167
Parking Available in Lot T

PRESENTATION ABSTRACT

The world is advancing towards a technological revolution in various fields, yet the assistive devices available for people with disability, especially in developing countries, are in the most primitive stage. The World Health Organization's report on disability mentions that these barriers to assistive technology are equally applicable to users in developed countries making it a global concern. This talk will primarily focus on the unmet needs and challenges in the assistive device landscape and the research work done to address those. The talk will provide an overview of the development of knee joint in a knee-ankle-foot orthosis, which is commonly prescribed to individuals with severe lower limb muscle weakness. A structured user-centric design framework involving prototype development through user survey, CAD modeling, mechanical analysis, load testing of prototypes, mathematical modeling, and clinical evaluation will be presented. The various designs developed have the potential to empower and improve the lives of millions of people with lower limb disability all over the world.

ABOUT DR. BAPAT

Ganesh Bapat earned his MS-PhD in Mechanical Engineering from the Indian Institute of Technology Madras, India. His doctoral work focused on the design and clinical evaluation of knee joints used in lower limb orthoses. After completion of PhD, he worked as Postdoctoral Research Fellow in the TTK center for Rehabilitation Research and Device Development (R2D2) at IIT Madras, India. Presently, he is a Research Associate in the Department of Biomechanics at the University of Nebraska, Omaha. His current research focuses on the design of orthotic interventions to improve functional outcomes in patients with peripheral artery disease.

more info at cobre.unomaha.edu

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