

# INCLUDE

Unheard voices.

2022

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**THE HELEN HAMLYN  
CENTRE FOR DESIGN**

**INCLUDE. Unheard Voices** is a global conference that focuses on inclusive design and its people-centred, creative approaches. It is hosted by the Helen Hamlyn Centre for Design at the Royal College of Art.

The Helen Hamlyn Centre for Design (HHCD) is a globally recognised centre of excellence with a 30-year history of applying inclusive design and design thinking to improve people's lives. The term 'inclusive design' was framed by HHCD's founding co-director Roger Coleman in 1994, as a people-centred, comprehensive and integrated design approach to ensure that people with diverse abilities and needs are included in mainstream design consideration for products, services, technologies, and environments. The HHCD is the largest and longest-running design research centre of the Royal College of Art (RCA). The RCA was established in 1837 and in 1967 was granted Royal Charter and University status. It is a wholly postgraduate university institution of art and design, offering MA, MPhil and PhD degrees, and to this day, remains the world's leading university for art and design education, having received the #1 QS Ranking for the eighth consecutive year since 2015.

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# Computational Design Experiment for Older Adult's Footwear

Field-driven approach and product design applications

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The purpose of the study is to build tailor-made footwear soles for older adults through field-driven design and technology to satisfy their unmet needs and respond to the two research questions: 1. How to translate people's feet pressure data to shape the three-dimensional model of footwear soles to generate customized products? 2. How has the field-driven design approach transformed the roles and responsibilities of product designers and thus shaped human-centered design (HCD)?

One pervasive effect of aging is people's feet undergo a significant loss of cutaneous touch and pressure sensation. Their feet gradually become deformed and asymmetric depending on health, lifestyle, and walking postures. Mobility is a key factor to measure their life independence and we think footwear soles are the product most directly linked to mobility.

Field-driven design is a computationally lightweight process that is applied to three-dimensional objects through a single mathematical formula reinterpreting a solid body. It has made the process intuitive to precisely control models, simulate results efficiently and effectively. This study showed how we translated feet pressure data to rebuild comfortable, safe, and customized footwear soles for older adults and discussed the future roles of designers and HCD impacted by field-driven design and technology.

**Keywords:** *computational design; field-driven design; footwear; aging*

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