Brunel University London

BRUNEL PARTNERS
ACADEMIC CENTRE FOR
HEALTH SCIENCES

Design for Health

NHS
Central and
North West London
NHS Foundation Trust

NHS
Royal Brompton & Harefield
NHS Foundation Trust

NHS
The Hillingdon Hospitals
NHS Foundation Trust

NHS
London North West
University Healthcare
NHS Trust

NHS
Guy's and St Thomas'
NHS Foundation Trust

NHS
Birmingham Women's
and Children's
NHS Foundation Trust

What is Design for Health?

- It is a collaborative programme where we generate innovative concepts in response to clinical and health care needs and challenges
- It is a learning experience for Design Engineering students (but also Physio, Computer Science and Medical students) at Brunel University
- It is a pathway to products and service innovation, de-risking and testing the feasibility of solutions

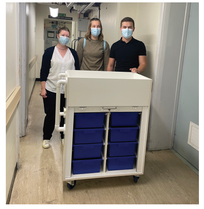
How Design for Health is beneficial for students

- Students can apply what they have learned to real clinical challenges, making a real difference in healthcare innovation
- Students have the opportunity to work directly with clinical champions or SMEs in the development of their projects
- Students receive support and guidance from the clinical champions and their organization who launch the challenges.

Examples of previous projects:

Achieved a patent

Young Innovator Award Winner



Product in use in NHS

Funded by two grants so far

More detailed case studies below

What do I need to do?

- Healthcare challenges will be made available to you in the beginning of your final year
- If you are interested in one or more of them, you will need to get in contact with Dr. Gabriella Spinelli by providing your CV (2 pages) and a cover letter where you explain your interest
- The Design for Health projects do not require any extra assessment or deliverable beside those specified by your Major Projects.However, as you will have real design clients, you will be asked to pitch and communicate your ideas to them

How Design for Health can help Clinicians

- Bringing user-centred innovation and design thinking into your organisation at no cost
- Engage with multidisciplinary teams of students to respond to health challenges
- It is a pathway to products and service innovation, de-risking and testing the feasibility of solutions
- Generate proof of concepts and pilot data for wider collaborative projects

What do I need to do?

- Help define the design challenge for students
- Provide clinical expertise to the project (This is light touch mentoring for students)
- Facilitate access to the clinical environment, including other colleagues and patients, where appropriate and with supervision

For research management purposes: D4H collaborative projects are normally classed as service evaluation by the participating NHS Trusts. A collaborative agreement is signed at the beginning of each project.

How Design for Health can help Businesses

- User-centred Innovation is introduced/applied in your company at no cost
- Potential to engage with multidisciplinary teams of students to respond to health challenges
- Generate proof of concepts and pilot data for wider collaborative projects

What do I need to do?

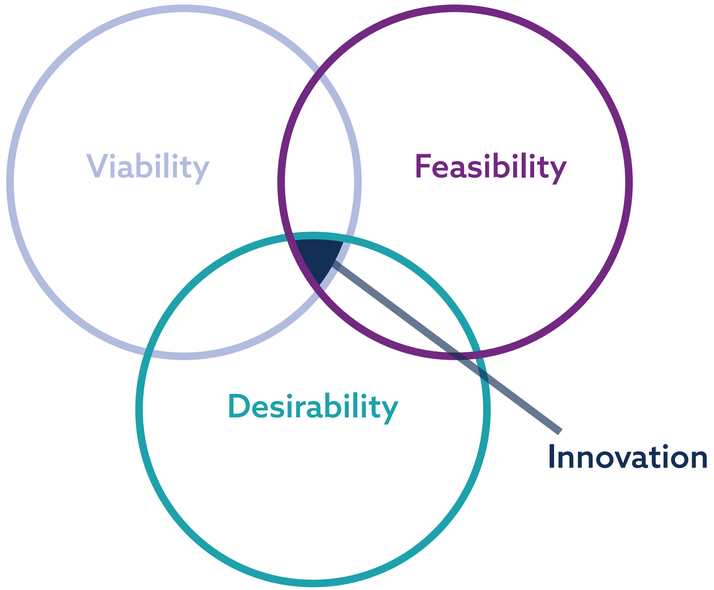
- Help Define the design challenge for the student and

  (for more information contact Gabriella Spinelli)
- Provide technical and commercial expertise to the project (Light touch etc.)
- Enable access to current solutions and technology innovation

A collaborative agreement is put in place at the very beginning of each project.

What does Design for Health Deliver?

Design innovation lies at the intersection of viability, feasibility, and desirability, ensuring healthcare solutions are market-sustainable, technically achievable, and user-centric.



Examples of previous projects:

CVC insertion simulator

Ultrasound compatible Simulator for the insertion of Central Venous Catheters into Neonates

Nura

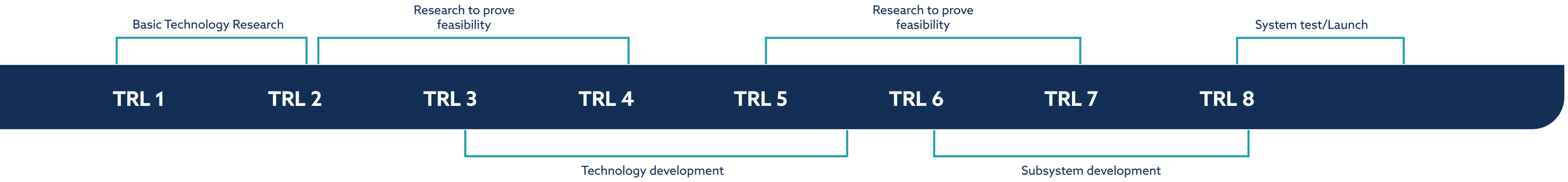
A Functional Electrical Stimulation Sleeve for Upper Limb Stroke Rehabilitation

More detailed case studies below

What does Design for Health Deliver?

Technological Readiness Level (TRL)

Technological Readiness Levels are a way of estimating the maturity of technologies. Design for health projects can develop concepts from basic technology toprojects proving the technical feasibility of the innovation.



Design For Health

Further development through other mechanisms

High resolution protoypes delivered in May

Nura

Collaborative Project 2023-2024

A Functional Electrical Stimulation Sleeve for Upper Limb Stroke Rehabilitation

Technology currently under patent application

42%

Faster at being worn compared to typical FES device

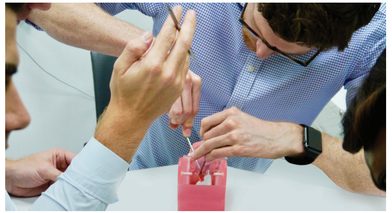
CardioCrown

ReCleft

Collaborative Project 2018-2019

A high fidelity reusable training simulator.

Registered Patent



"it helped me appreciate the surgical difficulties"

"it helped me understand the handling of fragile tissues"

"the simulator has taught me real-time feedback"

21%

Increase in knowledge in just one hour

18%

Increase in confidence in just one hour

89%

Said it was a valuable learning experience

92%

Strongly agreed it helped them learn the procedure

Evelina London Children's Hospital

NHS Guy's and St Thomas' NHS Foundation Trust

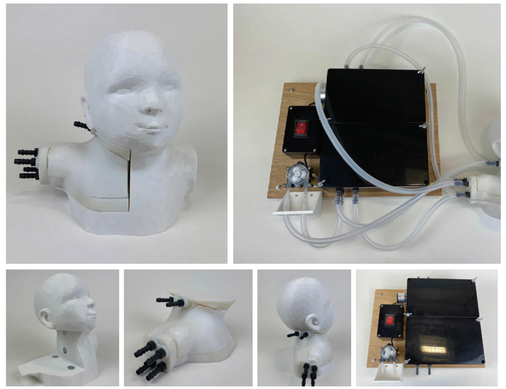
CVC insertion simulator

Collaborative Project 2020-2021

Highly Commended Medical Product 2021

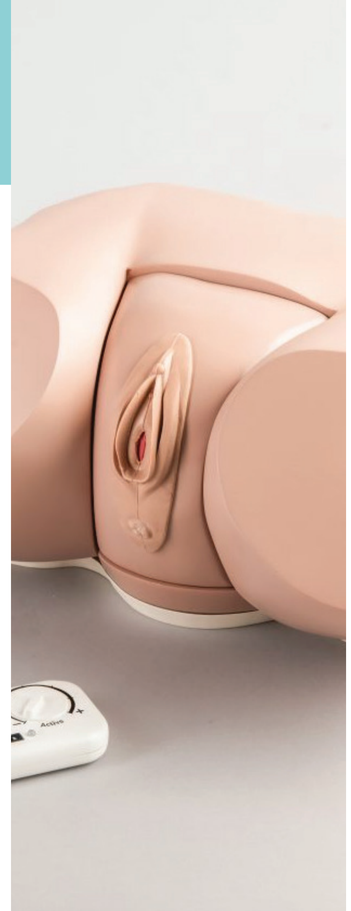
THE ENGINEER Collaborate to Innovate

Ultrasound compatible Simulator for the insertion of Central Venous Catheters into Neonates



Evelina London Children's Hospital

NHS Guy's and St Thomas' NHS Foundation Trust

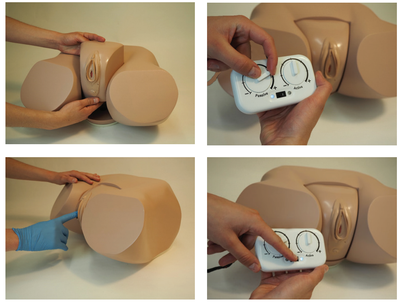


Simlevator™

Collaborative Project 2023-2024

Currently under further development

A clinical simulation device to improve the ethics, safety, and quality of intimate pelvic floor examination learning.



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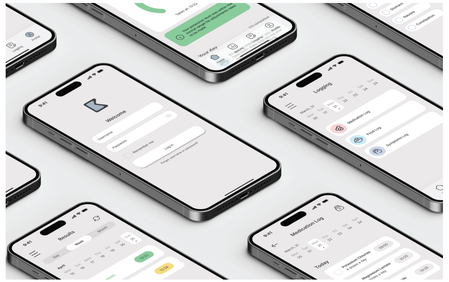
Kali

Collaborative Project 2023-2024

A Portable Potassium Monitoring Solution

Won New Designers Designer of The Year 2024



100%

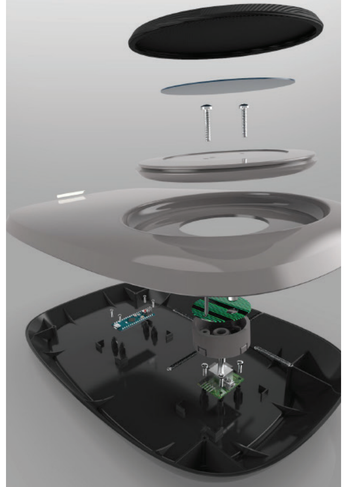
Users would use the system upon release

"It's gonna be a lot more manageable for people. Fantastic. A lot less stress"

"It's just worth having the actual dose on there, just so that it's crystal clear what they should be on."

Kalium Health™

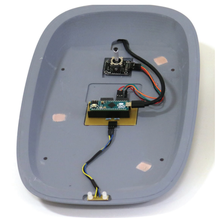
NHS Guy's and St Thomas' NHS Foundation Trust



OpTrack

Collaborative Project 2017 - 2018

Reliable & Robust Foot-Mouse



"We were able to adjust the cursor speed and click sensitivity to her requirements thereby facilitating an adaptable experience."

NHS The Hillingdon Hospitals NHS Foundation Trust