

Dr. Farnaz Nickpour



**Director of The Inclusionaries Lab for Design Research.
Design Lead at Department of Materials, Design and
Manufacturing Engineering.
Designer-in-Residence at Marie Curie Hospice.
Reader in Inclusive Design and Human-centred
Innovation at the University of Liverpool.**

Dr. Farnaz Nickpour is an inclusive and human-centred design scholar, researcher and educator with more than 15 years of experience in leading inclusive design research across healthcare and mobility sectors in the UK, and Director of The [Inclusionaries Lab](#) for advanced design research at The University of Liverpool, UK. Farnaz's research focuses on critical and contemporary dimensions of design for inclusion and human-centred innovation, aimed at advancing four strategic research themes i.e., Inclusive mobility; Psychosocial inclusion; Inclusive health innovation; and Design for palliative and end-of-life care. Farnaz has an established track record of award-winning design research, education, and knowledge transfer, with 50+ peer-reviewed design publications, External Examiner appointments at the Royal College of Art and University of Brighton UK, and various advisory, review and scientific committee positions.

Cara Shaw



**Design Researcher on 'SMART Suit' project.
CTO at The Accessibility Institute.
PhD Researcher at the University of Liverpool.**

Cara Shaw is an Inclusive Designer and PhD Researcher who has designed and developed a variety of healthcare and mobility products, from all-terrain wheelchairs and evolvable walking aids to smart exoskeletons and rehabilitation devices. Her work has been recognised by over 15 design awards and her research has been As well as hands-on design and engineering work, Cara has led design research, ethnographic studies and usability trials for a range of companies, start-ups and charity sector organisations internationally.

Cara currently works as a design researcher on the development of an upper-body exosuit for children and young people with progressive neuromuscular diseases. She is also Chief Technology Officer at The Accessibility Institute in Kenya, where she directs and manages the design and development of user-centred assistive technology and mobility products, primarily to support people living in poverty in low-resource settings.

Luka Kille-Speckter



**Installation design & third sector consultant.
Design Researcher at MerseyCare LifeRooms.
Visiting Lecturer at HDM, Stuttgart, Germany.
PhD Researcher at the University of Liverpool.**

Luka Kille -Speckter is a lived-experience designer, consultant, PhD researcher and educator. Her mixed background of social science, experience design and inclusive design, Luka combines her expertise with her lived experience of visual impairment to outline design opportunities and impact.

Andrew Tibbles



**Designer-in-Residence, Marie Curie Liverpool.
PhD Researcher, the University of Liverpool.**

Andrew Tibbles is a speculative designer and a PhD researcher with a fascination for the consequences of new and emerging technologies on individuals, collectives and societies. His background is in product design and he made a career in makerspaces, creating, experimenting and teaching emerging modern manufacturing techniques and machines across the UK.

What began as a pragmatic honour's year project towards death, dying and beyond, became a source of constant curiosity and is now part of his PhD research in collaboration with Marie Curie Hospice Liverpool; exploring how, why and should technology and artificial Intelligence play a role in the future of hospice care. And what many forms those technologies could take to strive towards a 'good death' in the modern age. Andrew's PhD is funded by Doctoral Network in AI for Future Digital Health.

Isobel Leason



**Design Researcher on 'SysteMatic' Project.
PhD Researcher at the University of Liverpool.**

Isobel Leason is a design researcher in inclusive healthcare innovation. She was trained in Product Design Engineering and spent time working in the orthodontic technology sector. Her current PhD research, funded by the Doctoral Training Network in Technologies for Healthy Ageing, conceptualises and adopts a Critical Inclusive Design approach in oral health systems to co-define an agenda towards "Oral Health for All". She also works on the SysteMatic project; developing a Systems Engineering Innovation Hub for prevention, precision and equity by design for people living with Multiple Long-Term Conditions (MLTC).

The Inclusionaries Lab; Evolving Perspectives, Practices and Priorities for Advancing Design Research

Farnaz Nickpour, Cara Shaw, Luka Kille Speckter, Andrew Tibbles, Isobel Leason.

Abstract

The Inclusionaries is an award-winning UK-based design research lab focused on advancing the agenda, knowledge and know-how for Inclusive and Human-centred Design across health and mobility sectors and paediatric and adult populations. The collective consists of five core researchers including experienced designers, makers and lived experience experts and the work focuses on four strategic research themes i.e. Inclusive Mobility; Psychosocial Inclusion; Design for End of life; and Inclusive Health Innovation. The Inclusionaries Lab mission is to support organisations, practitioners and researchers in integrating advanced inclusive and human-centred design into their processes and practices. This article outlines the evolving principles, positionality, practices and priorities of the lab as a design research collective.

Keywords

Design research; Research lab, Design collective, Inclusive design, Human-centred design, Inclusive Health, Inclusive Mobility, Positionality, End of life, Psychosocial inclusion, Healthcare innovation.

1. Aim, Philosophy and Impact at The Inclusionaries Lab

The Inclusionaries is a design research lab specialising in inclusive and human-centred research, design, engagement and innovation. The lab investigates critical and contemporary dimensions of inclusive design and human-centred innovation for people, communities, and society. Our work supports organisations, practitioners, and researchers in integrating advanced inclusive and human-centred design into their work.



Figure 1. The Inclusionaries Lab team from left to right; Andrew Tibbles, Isobel Leason, Farnaz Nickpour, Luka Kille-Speckter, Cara Shaw.

1.1 Aim & Scope

The Inclusionaries work actively centres sensitive healthcare and low-resource settings, areas of unmet need, and populations particularly disserved by innovation.

As a design research lab directly informed by and involved in real-world practice, The Inclusionaries has two intertwined goals:

- 1. Advancing the agenda, knowledge and know-how for inclusive & human-centred design across healthcare and mobility sectors.**
- 2. Advancing health, mobility and equity in disadvantaged groups and marginalised contexts across paediatric and adult populations.**

Importantly, in design research and practice terms, the disadvantaged and marginalised groups, seldom heard voices and underrepresented contexts translate into 'extreme user groups', 'extreme scenarios of use' and 'extreme contexts of use'. Unlike the above though, these design terms and concepts span both ends of the spectrum including 'power users' as well as 'rejectors' which, due to a multitude of complex, contextual and intersectional factors, are not typically included and designed for within mainstream design processes and not catered for within the mainstream provision.

Hence, The Inclusionaries aims to actively:

- 1. Acknowledge, identify and engage extreme user groups;**
- 2. Speculate, design, develop for extreme use scenarios and contexts to bring them back to centre - in its pluriversal sense.**

1.2 Inclusion; Our philosophy

The Inclusionaries applies inclusive and human-centred design principles to bring seldom heard voices, disparities and experiences from the margins - in design terms, extreme user groups, scenarios and contexts of use - to the centre of design processes, practices and outcomes, and to advance those scenarios and contexts for both extremes and mainstreams.

The distinction, as well as the dynamics between 'mainstream' and 'extremes' - as in the distinction and dynamics between 'centre' and 'margins' - is the underpinning philosophy that shapes and informs our thinking and practice. We believe capturing distinctions and dynamics between the extreme and the mainstream impacts three distinct orders:

- 1. Benefiting the WHOLE - acknowledgement of and engagement with margins and peripheries within any system, such as its extreme user groups, scenarios and contexts of use, grants a more critical, reflexive and holistic understanding of the 'nature' of that system, and enables diverse and de-centralised interrogation, improvement, speculation and transition of the system as a whole.**
- 2. Benefiting the EXTREME - acknowledgement of and engagement with extreme user groups, scenarios and contexts of use, brings them back to the centre of design processes, practices and outcomes, prevents exclusion by design, and enables inclusive, just and equitable provision.**
- 3. Benefiting the MAINSTREAM - acknowledgement of and engagement with a diverse range of design constraints and challenges introduced by extreme user groups, scenarios and contexts of use, enables and affords more innovative,**

nuanced and encompassing design solutions benefiting the mainstream.

We acknowledge the design semantics of 'extreme' user/scenario/context might not be conducive across disciplinary or lived experience semantics and may create healthy tensions. We acknowledge the same for the term 'user' - albeit it is becoming increasingly nuanced within the design discipline.

1.3 Impact

We define and measure our success through a triple impact agenda focused on knowledge development, exchange and dissemination.

A. Knowledge and Know-how Development & Agenda Setting

Establishing new areas of design research including 'Psychosocial inclusion'; 'Design Meets Death'; and 'Inclusive Paediatric Mobility (IPM) Design'. Advancing design knowledge through design frameworks, guidelines and evidence maps across inclusive mobility, oral health, end of life, and design-led participation.

B. Knowledge Exchange & Advancing Real-World Practice

Leading advanced inclusive and human-centred user research partnerships, product/service/system design research with end-users and stakeholders including co-creation and design discovery processes. Developing innovative inclusive health and mobility solutions including SMART SUIT upper body exoskeleton; SafariShop mobile shop for inclusive livelihood; DBO commode for hospital wards. Initiating award-winning design innovation in health and mobility settings including Designer-in-Residence model for design research in palliative and end of life care.

C. Knowledge Dissemination & Engagement

Disseminating design research through more than 50 peer-reviewed academic publications and invited/organised research engagements across multiple design/non-design platforms. Academic and industry training and end-user and public engagement services in curated workshop/short course/track/seminar formats. Pioneering interdisciplinary design education through teaching design to the medical workforce of the future - establishing a 'Design in Healthcare' course in University of Liverpool School of Medicine MBChB program.

2. Position and Positionality at The Inclusionaries Lab

The Inclusionaries team consists of five core design researchers, including experienced design academics, assistive technology designers, speculative designers and makers and lived experience experts. In introducing the collective, we believe it is important to capture the evolving positions as well as positionalities of each individual design researcher, e.g. the team's backgrounds, expertise & experiences, contexts and perspectives that might inform our work.

Dr. Farnaz Nickpour



**Director of The Inclusionaries Lab for Design Research.
Design Lead at Department of Materials, Design and
Manufacturing Engineering.
Designer-in-Residence at Marie Curie Hospice.
Reader in Inclusive Design and Human-centred
Innovation at the University of Liverpool.**

Dr Farnaz Nickpour is an Iranian-British design academic, researcher and educator with more than 15 years of experience in UK higher education institutions. Farnaz's design expertise and approach to inclusive and human-centred design is informed by her eurocentric education in Industrial Design and Design Strategy and Innovation in Tehran and London, and shaped through her equity-innovation, user-centric product & service, and critical and contemporary design lenses. As an emigrant, immigrant woman of colour, dual national with duality in culture and value system, and researcher with a criticality-strategy-diversity-innovation value set, Farnaz's work inherently gravitates towards the edges and extremes within a system - to acknowledge, engage and centre them through design. This is evidenced in Farnaz's design research leadership spanning healthcare-mobility sectors and adult-paediatric populations; from design for end-of-life and psychosocial inclusion agenda setting, to establishing award-winning design research/education frameworks for clinical workforce, sensitive health and inclusive

mobility settings; to leading inclusive Med-Tech design for childhood disability and blueprinting systems innovation hubs for people living with multiple long-term conditions.

Cara Shaw



**Design Researcher on 'SMART Suit' project.
CTO at The Accessibility Institute.
PhD Researcher at the University of Liverpool.**

Cara is a British design researcher who has accumulated a breadth of experience in industrial design, human factors engineering and ethnography since her first design engineering job in 2012. She was a first-gen university student in London, studying Industrial design and technology, which shaped her user-centred, interdisciplinary and eurocentric understanding of design. Upon graduating, Cara founded a company to develop assistive mobility devices, motivated by her grandfather's sudden decline in mobility. She went on to co-found a social enterprise 'The Accessibility Institute' (TAI) developing assistive mobility solutions for people living in poverty; her understanding of design for low-resource settings is strongly informed by the time she has spent working in rural Kenya. Cara has since designed, developed and implemented mobility and disability products internationally (Europe, South America, Africa). After several years working on inclusive mobility projects for a range of R&D startups, companies and charity sector organisations, Cara began a PhD at the University of Liverpool, focused on inclusive paediatric mobility design. Cara's design approach tends to focus on design justice, equitable participation and access for all.

Luka Kille-Speckter



**Installation design & third sector consultant.
Design Researcher at MerseyCare LifeRooms.
Visiting Lecturer at HDM, Stuttgart, Germany.
PhD Researcher at the University of Liverpool.**

Luka is a lived-experience designer, consultant, and PhD researcher with a multidisciplinary background in Social Science and Experience Design. This multidisciplinary foundation shapes her positionality, allowing her to view issues through a lens that often incorporates methods and approaches from social science into her design work. Her lived-experience of visual impairment, coupled with a significant dedication to raising awareness about visual impairment and sensory diversity, is evident throughout her work, reflecting both personal and professional perspectives. This commitment is also reflected in her PhD topic, Psychosocial Inclusion, which delves into the different dimensions inclusion/exclusion can inhabit, including the physical, emotional, psychological, social, and cultural aspects. Luka's introduction to Inclusive Design occurred at its origin, the Helen Hamlyn Center for Design at the Royal College of Art. This early exposure profoundly influences her understanding and approach to inclusive design, adding a rich layer to her expertise and contributing to the nuanced perspective she brings to her work. Luka is deeply committed to fostering a shift from deficit-based, ableist approaches to an understanding of holistic experiences for individuals.

Andrew Tibbles



**Designer-in-Residence, Marie Curie Liverpool.
PhD Researcher, the University of Liverpool.**

Andrew is a British-born male with his formative years in rural England and his adolescent years in urban Scotland. Studying Product Design (BSc Hons) at the University of Dundee he developed interests in design ethnography, participatory design, speculative design and advanced manufacturing. The teaching also influenced much of his thinking in terms of the responsibility of design and the role play can have on knowledge-making. His career has developed through Makerspaces, first in London, then in Glasgow building his teaching and craft skills. Andrew has experience with design exhibitions as both a developer and exhibitor, his own exhibitions have centred around the topics of Death and AI and Democracy. This has all led to his current PhD topic focused on desirable futures of hospice care, undertaken through an innovative Designer-in-Residence model, situating a designer in the heart of a working hospice, which has won a Culture of Innovation award at the North West Coast Research and Innovation Awards 2023. Andrew's design lens can be summarised as critical democratic societal imagination and change.

Isobel Leason



**Design Researcher on 'SysteMatic' Project.
PhD Researcher at the University of Liverpool.**

Isobel was born and educated in the UK. She has an MEng in product design engineering, which she gained in Glasgow studying across two institutions with distinctive cultures - the School of Design at Glasgow School of Art and the School of Engineering at the University of Glasgow. Her understanding of design is influenced by this education, which was: human-centred, interdisciplinary, euro-centric. Her interest in health innovation developed in university, and since then she spent time working in the orthodontic technology sector in the UK and Turkey. Her interest in oral health in particular, stems from personal experience of significant orthodontic treatment and dental surgery with a difficult recovery period. In recent years, her interest has shifted from healthcare products and technology to health systems and policy. This led to her current PhD research which explores 'extremes and mainstreams' in oral health systems, and develops an agenda for transitioning towards inclusive oral health systems. She adopts critical and systemic design approaches, focusing on equity, social justice, and the experiences of people who are often excluded from research.

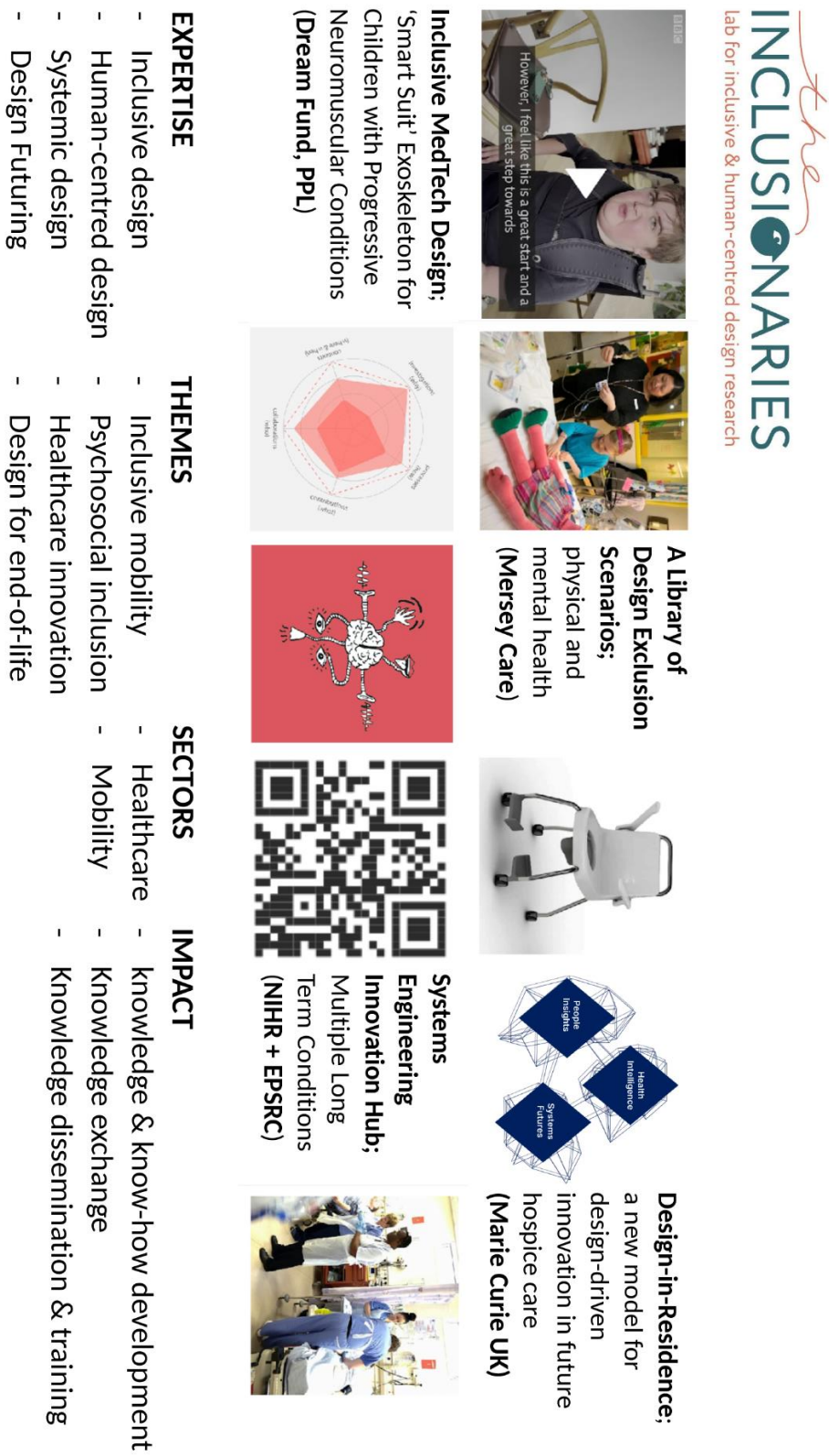
3. Strategic Research Themes at The Inclusionaries Lab

The Inclusionaries Lab's work spans inclusive and human-centred design research across mobility-health sectors and paediatric-adult populations and is focused on advancing knowledge and know-how within four strategic themes: Inclusive Mobility; Psychosocial Inclusion; Design for End of life; and Healthcare Innovation.

Figure 2 provides an overview of the Inclusionaries Lab design research, outlining the lab's Expertise, Themes, Sectors and Impact. It also represents one current design research project from each of the four design research themes at The Inclusionaries Lab;

1. **Inclusive Mobility** - Inclusive MedTech Design; designing the 'SMART Suit' exoskeleton for children and young people living with progressive neuromuscular conditions and developing the ICER Framework of design-led participation (PPL Dream Fund).
2. **Psychosocial Inclusion** - Design Exclusion Library; co-creating a library of psychosocial and physical design exclusion scenarios across connected physical and mental health for social prescribing service users (Mersey Care NHS Foundation Trust).
3. **Design for End of life**; Designer-in-Residence; a new model for design-driven research and innovation in future hospice care systems (Marie Curie UK).
4. **Inclusive Health Innovation**; 'Systematic' Systems Engineering Innovation Hub; prevention, precision and equity by design for people living with Multiple Long-Term Conditions (NIHR and EPSRC).

Figure 2. Current landscape of design research at The Inclusionaries Lab in 2023



3.1 Inclusive Mobility

Inclusive mobility encompasses user-centred design, research and engagement to create products, services and systems which optimise movement and quality of life for mobility-challenged individuals and communities.

Our contributions to inclusive mobility design span adult-paediatric and personal-public dimensions and have been internationally recognised through multiple awards and publications as well as through interventions such as evolvable walking aids, all-terrain wheelchairs and smart exoskeletons - currently in development.

We are currently applying an advanced design research methodology to the 'SMART Suit' project, to develop a first-of-its-kind assistive upper body exoskeleton for children and young people with progressive neuromuscular conditions. We are also working on the development of an all-terrain paediatric wheelchair for low-resource settings through applying child-centred and collaborative methods.

Inclusive Mobility



Figure 3. Inclusive Mobility design research at The Inclusionaries Lab

3.2_Psychosocial Inclusion

“Psychosocial Inclusion” coined by the Inclusionaries as “the provision via design interventions of equal or equitable opportunities for a better quality of life for as many people as possible, considering both psychological and social factors”, aims to unpack and shift design inclusion narratives away from physical, ableist & deficit-based, medical models of disability onto experience-led, person-centred & capabilities-based, social & design models of disability.

Our past research has established the formal definition and four constructs of Psychosocial Inclusion in Design (mobility and shopping context) and offered a first timeline review of narratives and milestones of design for disability. Our current research focuses on developing a library of design exclusion/inclusion scenarios in the context of connected physical and mental health.

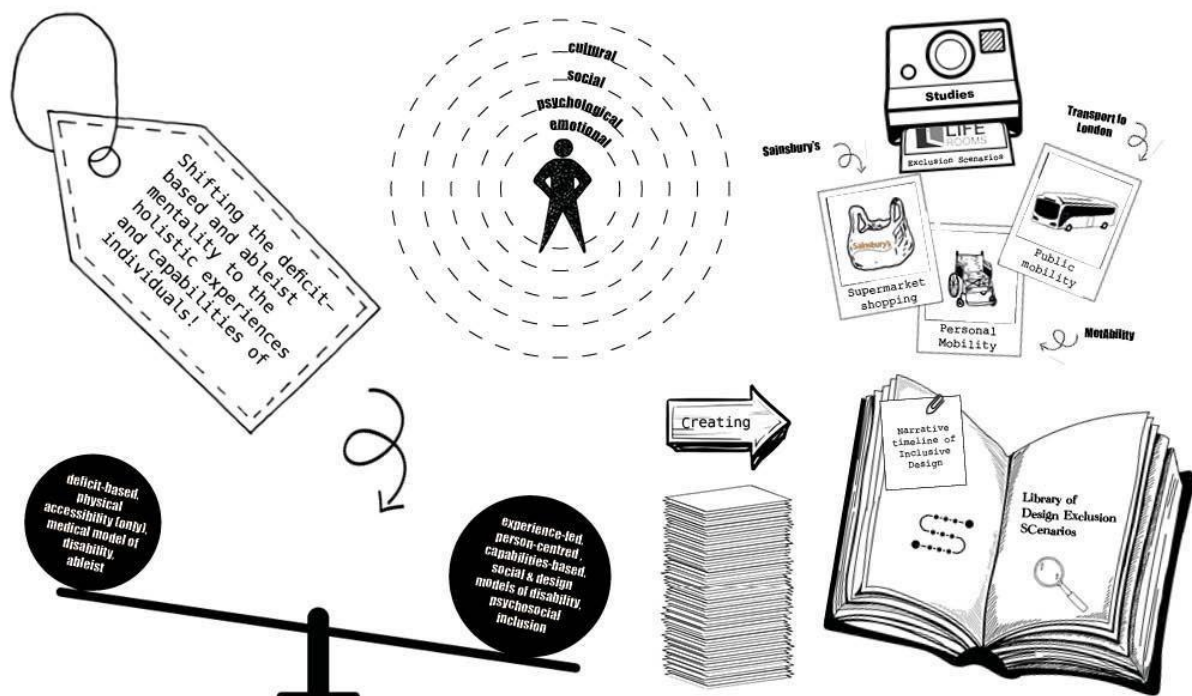


Figure 4. Psychosocial Inclusion design research at The Inclusionaries Lab

3.3 Design for End of life

Coined as '*Design Meets Death*', our work aims to establish a theoretically and empirically informed discourse between the two fields of design and end-of-life to identify critical questions, strategic opportunities, and significant contributions. For this, we adopt design-led framing; system-shifting design; design futuring; inclusive & human-centred design; and transdisciplinarity and place-based lenses & principles.

Our work has resulted in a first systematic mapping review of design contributions to end-of-life field providing granularity on the state of the field, and revisiting 'legacy' in the sensitive context of paediatric palliative care. We are currently pioneering an award-winning **Designer-in-Residence** programme within hospice care, taking a systems approach to understanding end of life care complexity. This includes mapping the relations within the system grounding us in the reality of today and using participatory asynchronous workshops and speculative design methods to reimagine leverage points that are value-driven and technologically supported.

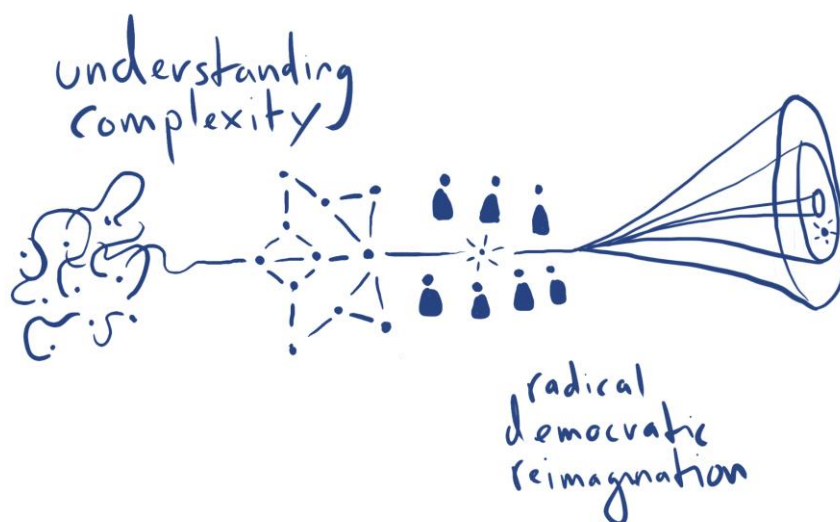


Figure 5. *Design Meets Death* research at The Inclusionaries Lab

3.4 Inclusive Health Innovation

Health, health and social care equity, and a just society are interconnected. Our Inclusive Health Innovation theme examines health in a wider systemic context to develop effective and equitable healthcare products, services and systems, to improve health outcomes, and to prepare the next generation of healthcare professionals.

We applying advanced inclusive and human-centred design principles, mindsets and processes, with lenses of complexity and intersectionality to focus on health disparities, in particular extreme scenarios in the two contexts of oral health and multiple long-term conditions where extreme users tend to have poor health outcomes.

We are interested in transdisciplinary application of design in healthcare, and lead a first design education initiative at the School of Medicine at The University of Liverpool, aiming to embed design within healthcare education. We are also currently the Design lead in the 'Systematic' project, developing a systems engineering innovation hub for people living with multiple long-term condition

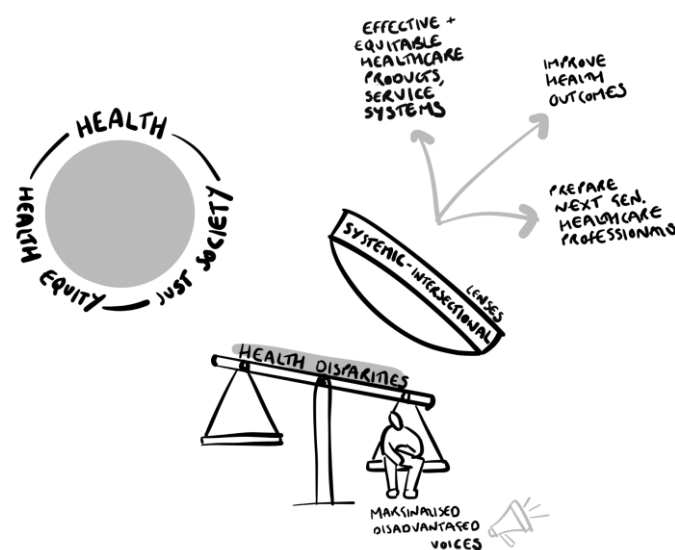


Figure 6. Inclusive Health Innovation research at The Inclusionaries Lab

4. Principles and Priorities at The Inclusionaries Lab

As a collective of design researchers, The Inclusionaries believe it is important to be critical and reflexive about our evolving perspectives, positionalities, practices and priorities. Since establishing in 2019, certain existing and emerging principles, mindsets and practices have become increasingly core to our design research, informing and underpinning our work and shaping and unifying our approach.

The evolving, emergent, critical and uniting nature of these principles and priorities is particularly noteworthy. We aim to capture them as they stand in 2023.

4.1 The Inclusionaries Definition of Design

Our work is increasingly situated within wider systems involving inter-disciplinary partnerships, complex real-world contexts and non-design collaborators and clients, where the term 'design' is ubiquitously used and divergently interpreted. Hence, we have learned to communicate what we define as 'design' with our potential audiences proactively, at the outset, and in a succinct and tangible manner. Figure 7 presents The Inclusionaries definition of 'design'. As a design research lab, we define 'design' through three distinct lenses of design Epistemology, Praxiology and Ontology:

- 1. Design Epistemology [design knowing]: Design as a discipline that employs a combination of design-led principles, mindsets, knowledge sets, methodology sets, and skill sets.**
- 2. Design Praxiology [design doing]: Design as a process of problem-framing and generating new possibilities that employs a subsequent range of design practices, tools and**

methods.

- 3. Design Ontology [design output]: Design as a generator of contributions across four types (Theoretical - Methodological - Empirical - Interventional) and outcomes across four orders (Visual - Product - Service - System).**

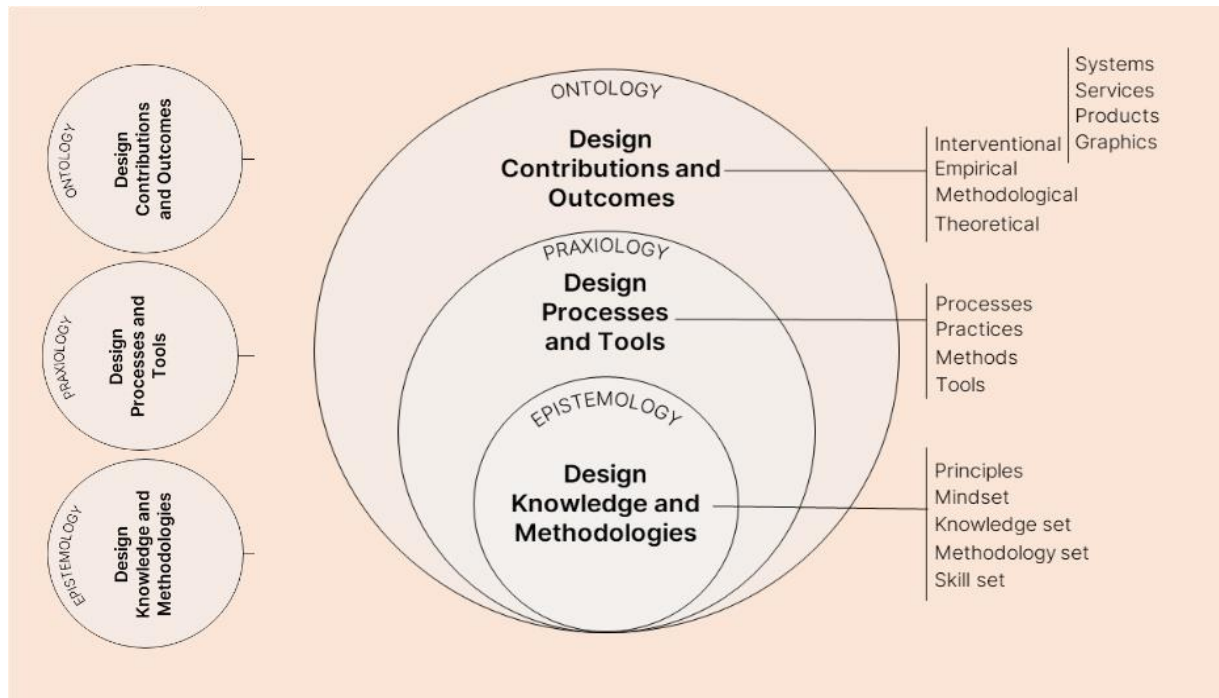


Figure 7. Definition of 'Design' by The Inclusionaries Lab

4.2 The Inclusionaries Positionality

Beyond individual positionality, we believe it is important to acknowledge the multiple contexts and evolving aspects that could inform and influence our collective design research approach as 'The Inclusionaries Positionality'.

- **Identity**
Predominantly female (4-1) and white European from Scottish, rural English and German ethnicities, including an Iranian. Experiences of dual nationality and duality in culture.
- **Education & Work**
Eurocentric industrial and product design education

delivered through design & engineering faculties of knowledge, with the exception of one member's social science background. High academic performance and achiever archetype. Work experience in non-corporate, entrepreneurial and freelance design practice and institutional design research.

- **Knowledge Expertise**
Inclusive & human-centred design perspectives mainly informed through the lenses of diversity, innovation, good design and user-centred processes, as well as lived experience.
- **Research paradigms**
Design research that is reflexive, perspective-building and primarily qualitative, and employs ethnography, phenomenology, and narrative inquiry to explore and interpret subjective meanings. Philosophical stance is primarily constructivist, interpretivist and critical.

4.3 The Inclusionaries Lens

Our work actively incorporates and continually surfaces principles and priorities which characterise our design research approach and are foundational and evolving in nature. We believe it is essential to document and interrogate these as they shape us and we inform them.

Values & Principles

- **Social Justice, Equity and Inclusion**
- **Pluriversality and Relationality**
- **Criticality and Reflexivity**
- **Interrogation, Navigation, Speculation and Transition**
- **Theoretical & Methodological first, Empirical & Interventional second**

Mindsets

- Agenda setting
- Knowledge building
- Evidence mapping
- Sensemaking
- Perspective and landscape building
- Narrative interrogating
- Intersectionality mapping
- Transdisciplinarity facing

Knowledge and Methodology sets

- Constructivist and Interpretivist
- Inductive and Abductive
- Exploratory and Descriptive
- Qualitative and Empirical
- Ethnographic, Phenomenological and Narrative Enquiry based

5. Going Forward

As an inclusive and human-centred design research collective and a group of individuals, we believe the future will bring inevitable change, shifting our structures, approaches and priorities - whether that change will be transformative is to be seen. Where we stand at this point in our own history and trajectory is unique, meaningful and inspirational to us. We hope and strive for it to be impactful and significant to the multiple worlds in which we exist. As Kurt Vonnegut puts it, *"I want to stand as close to the edge as I can, without going over. Out on the edge you see all kinds of things you can't see from the centre"*. And in the words of James Baldwin, *"not everything that is faced can be changed, but nothing can be changed until it is faced"*.

Isobel Leason



**Design Researcher on 'SysteMatic' Project.
PhD Researcher at the University of Liverpool.**

Isobel Leason is a design researcher in inclusive healthcare innovation. She was trained in Product Design Engineering and spent time working in the orthodontic technology sector. Her current PhD research, funded by the Doctoral Training Network in Technologies for Healthy Ageing, conceptualises and adopts a Critical Inclusive Design approach in oral health systems to co-define an agenda towards "Oral Health for All". She also works on the SysteMatic project; developing a Systems Engineering Innovation Hub for prevention, precision and equity by design for people living with Multiple Long-Term Conditions (MLTC).