# Agenda 5th Feb 2026

**11:00** Welcome by Prof. Sue Hartley, Vice-President for Research and Innovation at The University of Sheffield

**11:10** Introduction to the Network by Dr. Jennifer MacRitchie, Network director

**11:30** Panel discussion

**12:00** Coffee break

**12:10** 5-minute introduction to themes- imagine the future for:

- indoor and outdoor spaces
- arts, sports and culture
- in-person and online communication
- digital technology development and translation

**12:30** Group activity- current gaps in the provision

**13:00** Final comments and close

**13:10** Lunch and an opportunity to try out current technologies

# BRIDGES Network+

## Building Research Innovation co-Designing for Greater Empowerment and Support for people living with Dementia

Director: Dr Jennifer MacRitchie

Co-Director: Prof Li Su

Engineering and Physical Sciences Research Council

Alzheimer's Society

NIHR | National Institute for Health and Care Research

Rethinking how technology can help people with dementia live full, independent lives

# What happens in a network+ ?

## Events

- Research ‘sandpits’
- Talks and conferences
- Research agenda shaping
- Workshops for new researchers

## Funding

- Distributing funding calls
- Assessing applications and ranking priority of projects
- Funding projects and keeping in touch

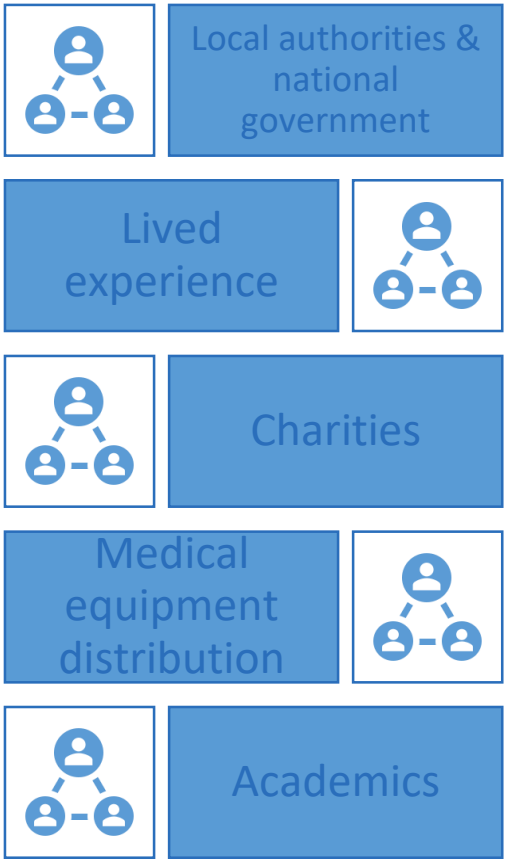
# BRIDGES' Vision

- A better understanding of the lives of people living with dementia and how technology might support this
- Amplify voices and increase understanding of different experiences of dementia (e.g. Lewy Bodies), and different trajectories (e.g. rapid progression) where the requirements may be different.
- Change the perspective and perception of what living well with dementia really means, beyond the medical symptoms, to address aspects such as boredom and loneliness

# BRIDGES

- Expertise from all parts of the technology development life-cycle
- Interdisciplinary exchange. Engineering, languages and communication, medicine, and more, led by the arts and humanities
- A vision of technology that empowers instead of limits. It “puts me in charge of everything I want to do”.

Advisory Board includes:



# Network Partners

BRIDGES Dementia Network+

Innovations in Dementia

The Lewy Body Society

DementiaUK
Helping families face dementia

Sheffield City Council

Kent County Council
kent.gov.uk

BOW
For All Robotics

# Equality, Diversity, and Inclusion

Prof. Su Li
University of Sheffield

Dr. Daniel Blackburn
University of Sheffield

Our EDI activities ensure the network is inclusive and representative by:

- Working directly with people living with dementia from diverse ethnic and social backgrounds.
- Partnering with groups like The Lewy Body Society, Innovations in Dementia, and Dementia UK to reach underrepresented communities.
- Holding public and community events to raise awareness of inequalities in dementia care and technology use.
- Following gold-standard involvement guidelines (NIHR and Dementia Enquirers ethics) to make sure people with lived experience are paid, trained, and supported to contribute meaningfully.

# Co-design

Dr. Joe Lindley
University of Lancaster

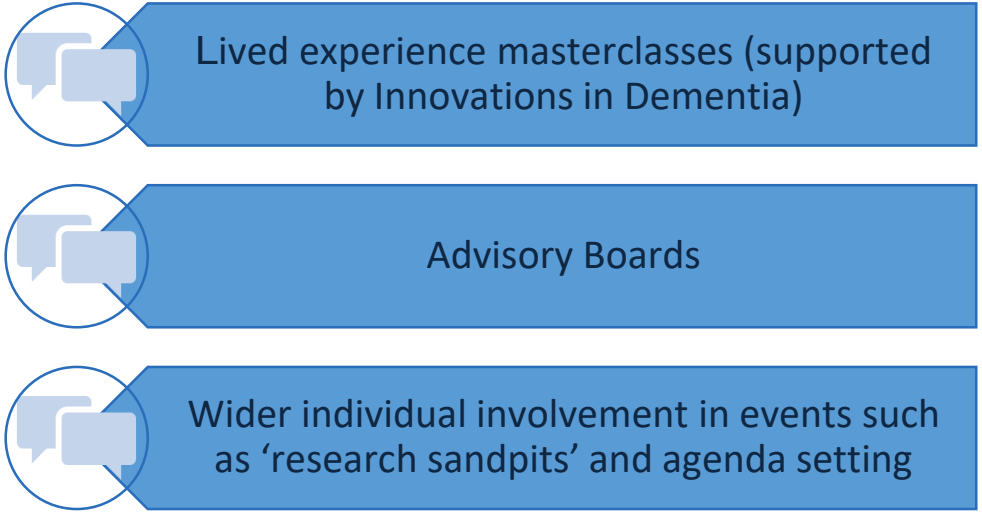
**Year 1 Discover**: Bring together people with dementia, carers, researchers, and community partners to identify real-life challenges and opportunities for technology.

**Year 2 Create**: Co-develop detailed design briefs for new ideas and projects, ensuring every proposal reflects lived experience.

Dr. Roger Whitham
University of Lancaster

**Year 3 Shape the Future**: Use what we've learned to build a national research agenda on independent living with dementia, influencing future funding and policy.

# Lived Experience Involvement



# BRIDGES' Objectives

## Training next generation of designers

ECR masterclasses

Funding sandpits

## Seeding innovative collaborations

Proof of concept funding

Rich design briefs & setting research agenda

## Understanding of quality of life

For people with different types and stages of dementia

That doesn't pre-define what a person living with dementia can/can't do

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# Panel Discussion

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# 10 min Coffee Break

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# Imagine the Future for .....

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# Indoor and Outdoor Spaces

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Assoc. Prof. Hua Zhong
London South Bank University

Prof. Tao Cheng
University College London

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# One App.

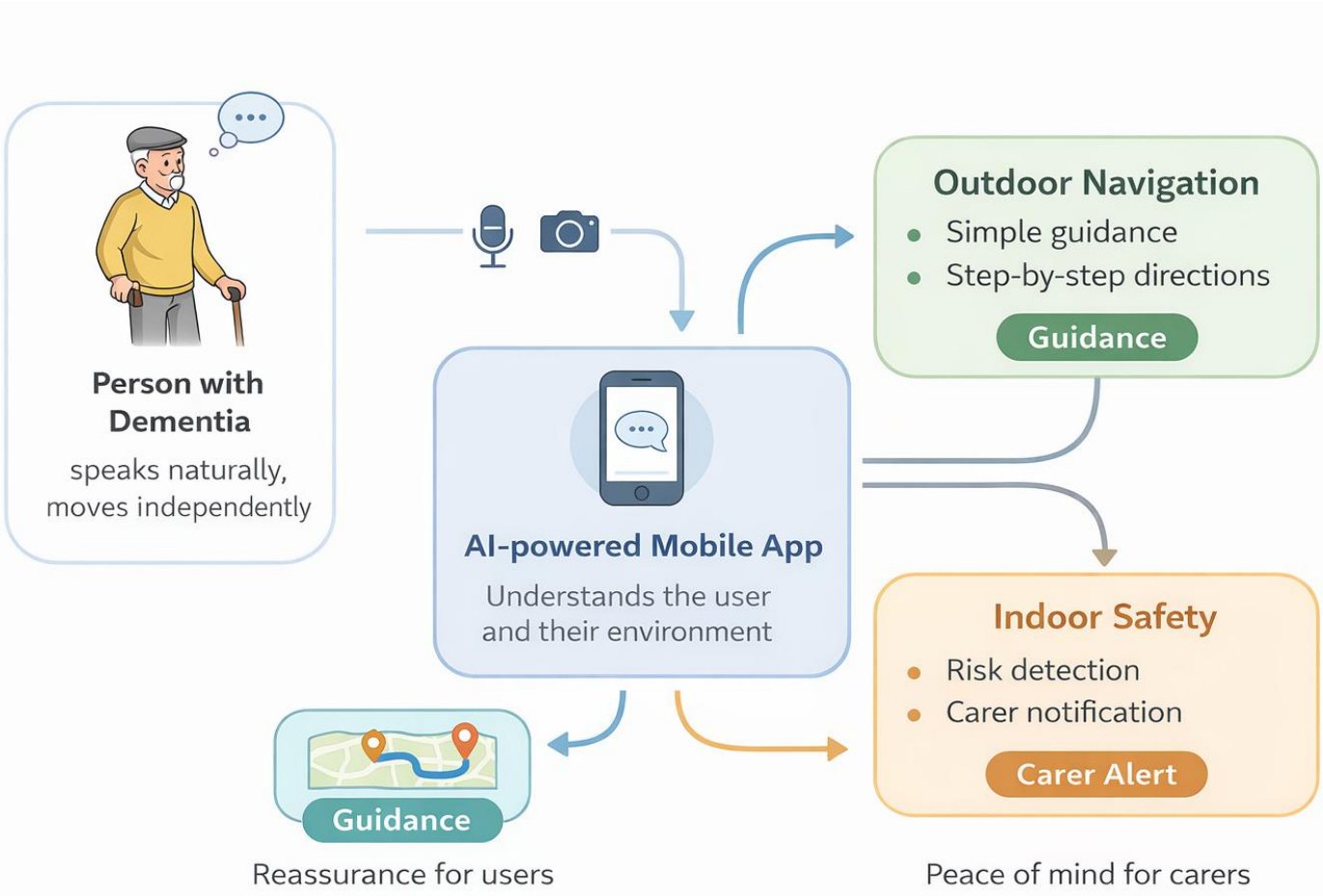
Safe Navigation Indoors and Outdoors for People with Dementia

## Outdoor Navigation

- AI-powered mobile app
- Safe outdoor navigation
- Uses camera, voice, and context

## Indoor Safety

- Safety and Healthy at home
- Detects risky situations
- Alerts carers when needed




Our goal is simple: to help people with dementia feel confident and safe, wherever they are

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# How the App Supports the User

Powered by computer vision and large language models

1. **The user speaks naturally**
   The app listens to the user's voice, just like talking to a person.
2. **The app sees and understands**
   Using the phone's camera, it understands the surrounding environment.
3. **The app checks safety and confidence**
   It assesses the user's situation, emotional state, and level of confidence.
4. **The app responds appropriately**

- If the user is confident: clear, gentle guidance is given
- If the user needs help: carers are automatically notified

**Dementia-friendly communication**

The app uses calm, reassuring language designed for people with dementia.

# Beyond the Walls: The Next Frontier of Dementia & the Built Environment

Bridging environmental science, digital innovation, and community integration


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# Arts, Sports and Culture

# Why Arts, Sports and Culture Matter for Dementia.

Dementia care must focus on **living well**, not just treatment

Arts, sports and culture support:

- Quality of life
- Independence
- Emotional and social connection

Aligns with national policy emphasis on **slowing impact, not just progression**

# The BRIDGES for Dementia Network Plus.

**Arts, Sports & Culture**

*We combine familiar creative activities with adaptive technologies to make them more personal, accessible and supportive of independence in everyday life.*

Professor Christian Morgner
(University of Portsmouth)

Professor Victoria Tischler
(University of Surrey)

# The Core Idea: Multi-Sensory Independence

***Creative Multi-Sensory Independence Support Framework (CMISF)***

Moves beyond single activities and combines: Arts, sports and cultural experiences

Uses **technology** to support **independence at home and in communities**

# Four Dimensions of Independence

**1. Cognitive Independence**

Personalised music (AI playlists)
Storytelling & VR heritage experiences

**2. Emotional Independence**

Digital art-making
Creative expression & emotional processing

# Four Dimensions of Independence

**3. Physical Independence**

Interactive exercise apps
Movement-based creative technologies
Reduces apathy, falls, hospitalisation


**4. Social Independence**

Co-design tools for community projects
Social robots & smart companion pets

# Why This Matters

*Multi-sensory, technology-enabled creativity can help people with dementia live life on their own terms.*

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# In-Person and Online Communication

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Prof. Anna Korhonen
University of Cambridge

Prof. Jim Ang
University of Kent

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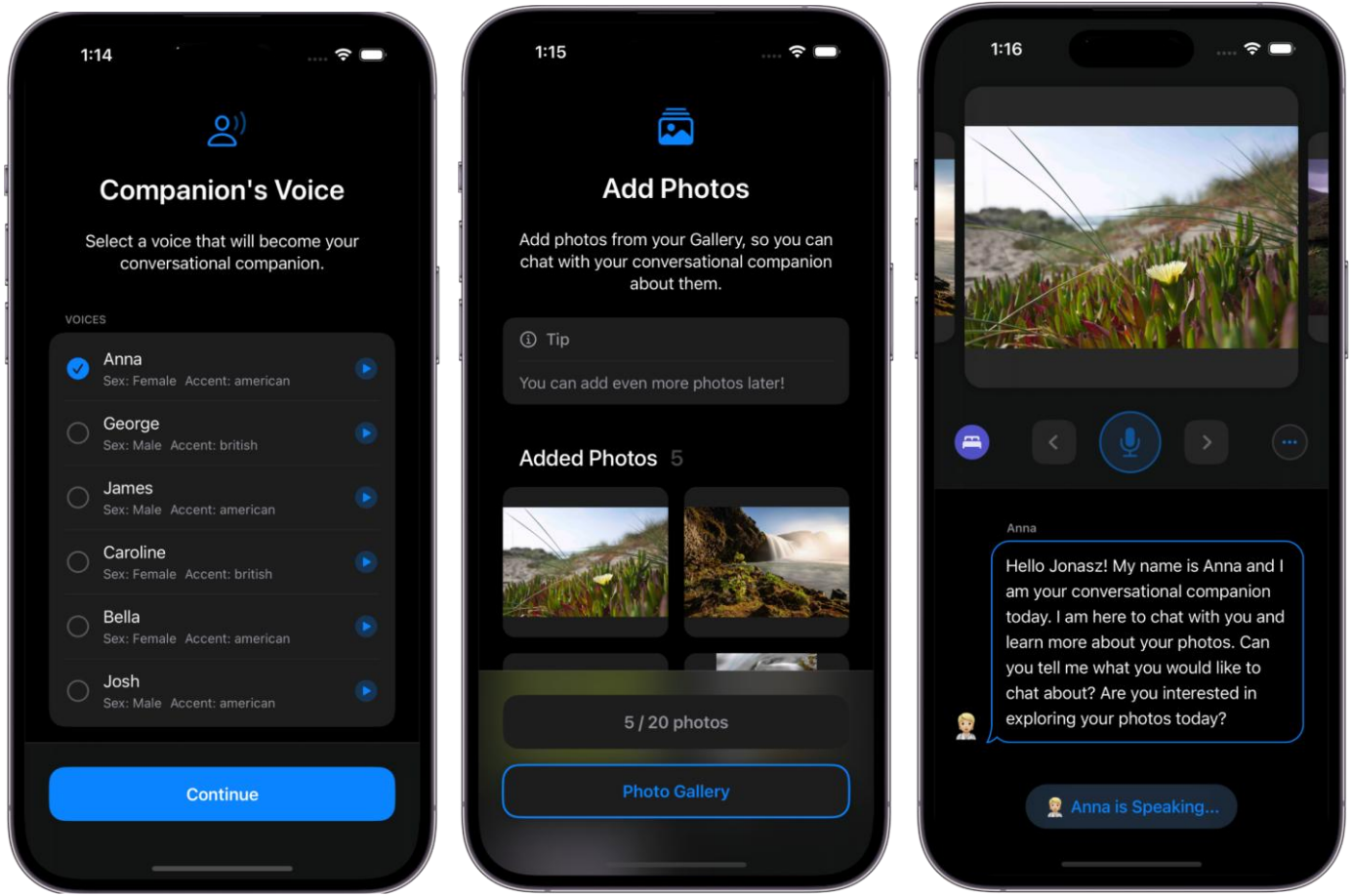

"She’s got to learn. But, actually,  from my last conversation, she is learning very quickly..and she’s **understanding what I’m saying**" (P5).

"I could talk to the robot longer than I could talk to a human because she didn’t tell me if I’ve repeated myself. […] **She was still listening...she [the bot] didn’t think I was boring**." (P8)

"It would be great if the bot could **suggest activities or share interesting stories without me having to prompt it**. It would make it feel more like a real conversation with a human" (P3).

"I would like to see **a face or an avatar representing the AI.** It would make it feel more personal” (P2).

"I think probably the bot needs to have a certain amount of **personality of its own**, so that you can say, you know, where do you live? " (P4)

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# Communication is central to empowerment and inclusion!

- Key research topics:
  - Dementia-tailored language models
  - Personalised conversational AI and virtual humans
  - Cross-platform communication tools

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# Digital technology development & translation

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Dr. Giovanni Masala
University of Kent

Prof. Huiyu Zhou
University of Leicester

# AI-Enhanced Cognitive Monitoring & Early Detection

AI using wearables, sleep and speech data to detect early cognitive decline

- Samsung Brain Health Service (CES 2026);
- SleepFM AI sleep analysis (sleepfm-ai-sleep-forecast-130-diseases-risks)

*Early detection enables earlier intervention and planning. These tools rely on passive data collection, aligning with independence-focused care.*

*Translation → integration into routine screening, ethical data use*


Reuters (2026); Samsung CES announcements

SleepFM AI sleep analysis
(https://www.nature.com/articles/s41591-025-04133-4

# Digital Biomarkers & Explainable AI

Digital biomarkers from movement, routines, speech

- Many projects with wearable devices
- SERENADE smart home sensing

*Explainable AI is critical so clinicians and carers understand why alerts occur.*
*Translation → validation, clinician trust, interoperability*

SERENADE project (2024)
https://ecare.unimi.it/pilots/serenade/

They are developing a solution for continuous behavioural remote monitoring at home, to identify digital biomarkers for early detection of cognitive decline.

# Remote Home Monitoring & Clinical Support

Smart home sensors and dashboards for clinicians

- MinderCare (NHS/Imperial);

*Remote monitoring reduces crisis events and supports ageing in place!*

*Translation → embedding into health and social care pathways*


https://www.imperial.nhs.uk/about-us/news/innovative-home-monitoring-service-aims-to-improve-care

# Robotics in Dementia Support

Social and therapeutic robots support mood, Cognitive Stimulation & Engagement

- Robotics Pets (like  low cost Jolly cat or Paro robotic seal)
- Social robots guiding daily activities, entertainment and soft monitoring

*Translation → Robots are most effective when augmenting, not replacing, human care. They can also be used as engagement tools, to reduce apathy and to promote social interaction.*

Pets

ElliQ

NAO
Pepper

Buddy pro

# Group activity- current gaps in the provision

# Group discussions

Share a story or an idea

Or just listen

Every experience matters

No technology expertise required

**Experiences**

- What would a good life with dementia look like?
- What does empowerment and independence mean?
- What makes things easy or what makes things hard?

**Strengths, Gaps and Challenges**

- What solutions or pieces of kit do people already use to achieve this?
- What assumptions are baked into currently available bits of technology that don't match with real life?

**What is most important to change?**

- What do you hope for from BRIDGES with this theme?
- What needs to change to make this type of technology possible and useful?

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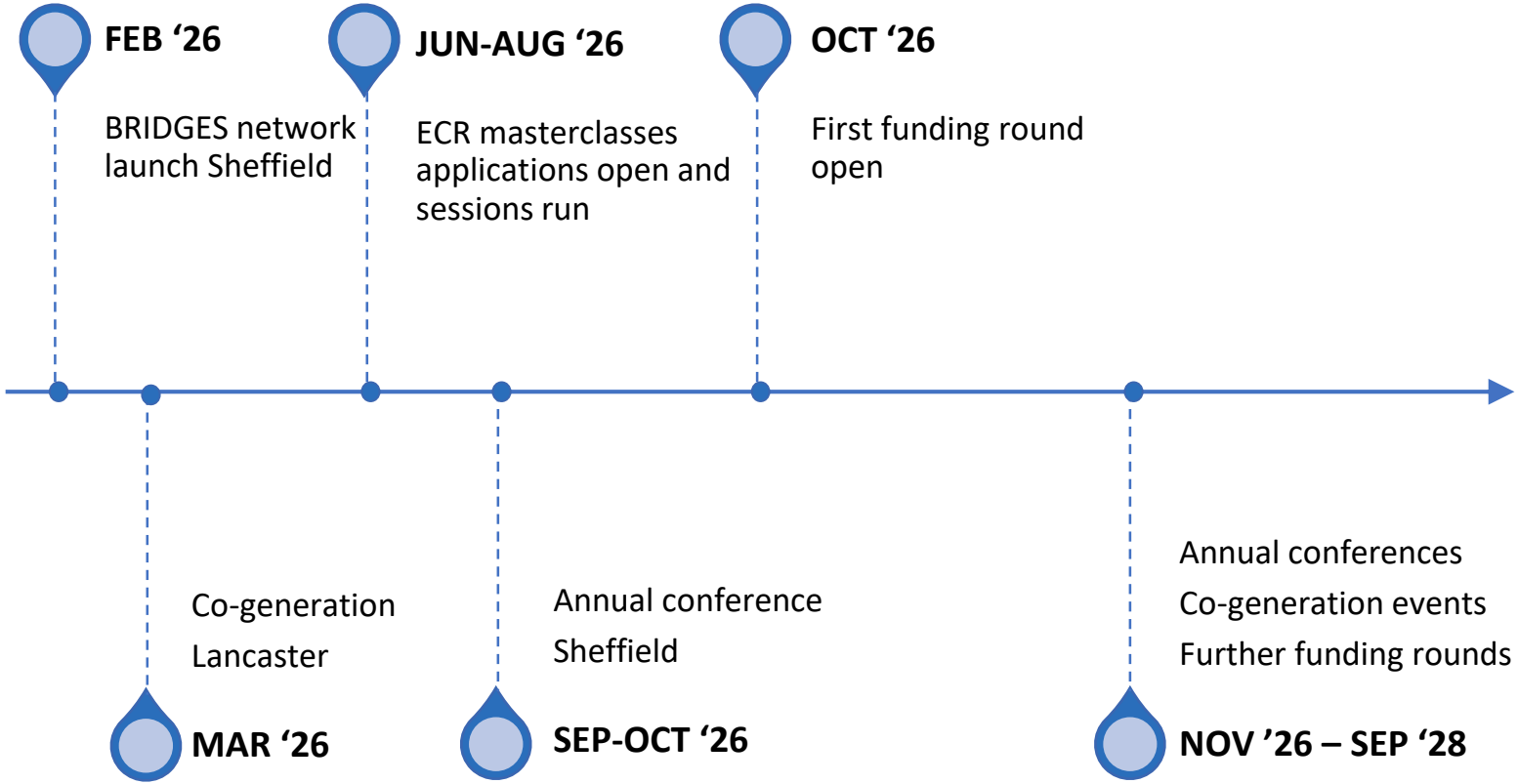
# What feels most important to change, improve or explore?

# BRIDGES' Timeline



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Feedback form

https://bridgesfordementia.org/