Service Design and Anticipatory Futures in Health

Silvia Grimaldi

Healthcare Improvement Scotland, Design Community of Practice, 27th May 2026

Silvia Grimaldi

Professor in Service Design
and Transformation

Co-Lead and Co-Founder
Service Futures Lab

London College of Communication
University of the Arts London

ma service design

service futures lab

ual: london college of communication

Practice-based Research
Service Design, Co-Design

- Placemaking + Local communities
- Service development
- EDI and Inclusive Design
- Organisational Design
- Health and Pharmaceutical R&D




Service Futures Lab
Public Event Series 2024
18 April 2024
Design Methods for Social Justice
Chaired by Silvia Grimaldi with:
Jenny Winfield, Head of Research, Chayn;
Hannah Jump, Senior Service Designer at HM Courts and Tribunals Service;
Alison Prendiville, Professor of Service Design at
Lead Product Designer at Accurx;
Design Lead TPXimpact;
Early Help,

What is Service Design?

“Let’s be clear - service design is the design of services.

To a user, a service is simple. It’s something that helps them to do something - like learn to drive, buy a house, or become a childminder.”

Lou Downe (2016), Government Digital Service, https://gds.blog.gov.uk/2016/04/18/what-we-mean-by-service-design/

What is Service Design?

“Service design is a human-centred discipline which focuses on:

Designing services in the public or private sector

Working in a participative, iterative and qualitative manner with all stakeholders

Considering wider systems at play”

Silvia Grimaldi, MA Service Design (2021)

Pharma Factory



Pharma Factory

Pharma Factory brings together scientists, small-medium enterprises (SMEs), social scientists and designers, to progress Plant Molecular Farming (PMF) technologies, where plants are used as factories for new medical products such as vaccines, diagnostics, and therapies.

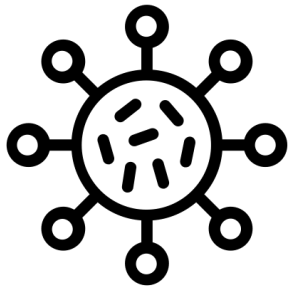
14 partners, 7 countries, 5 SMEs,
3 public research institutions
and 6 universities

2018-2022

UAL Team Lead:
Prof Alison Prendiville
Post-Doctoral Research Fellows:
Dr Silvia Grimaldi
Dr Rosie Hornbuckle

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774078

Medical Proteins



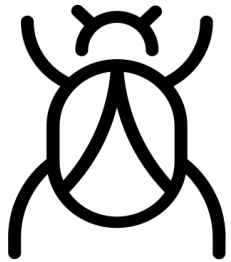
Bacteria



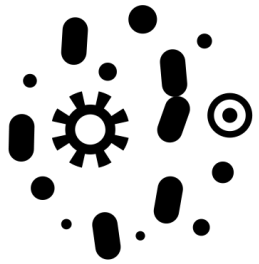
Mamalian cell



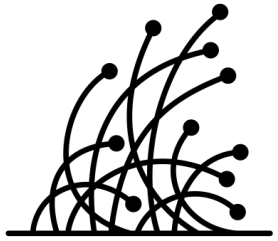
Yeast



Insect cell



Algi



Filamentous fungi



Plant cell

Very quick intro to Plant Molecular Farming (PMF)



Transient expression



Transgenic



Pharma Factory Outputs



Pharmaceuticals

a) an enzyme for treating Lysosomal Storage Disorders (LSDs)
b) an edible vaccine for farmed fish
c) a molecule for treating HIV
d) a diagnostic kit for Sjögren's Syndrome or Rheumatoid Arthritis



Education

e) a lab kit for transient expression for schools and labs



Regulation

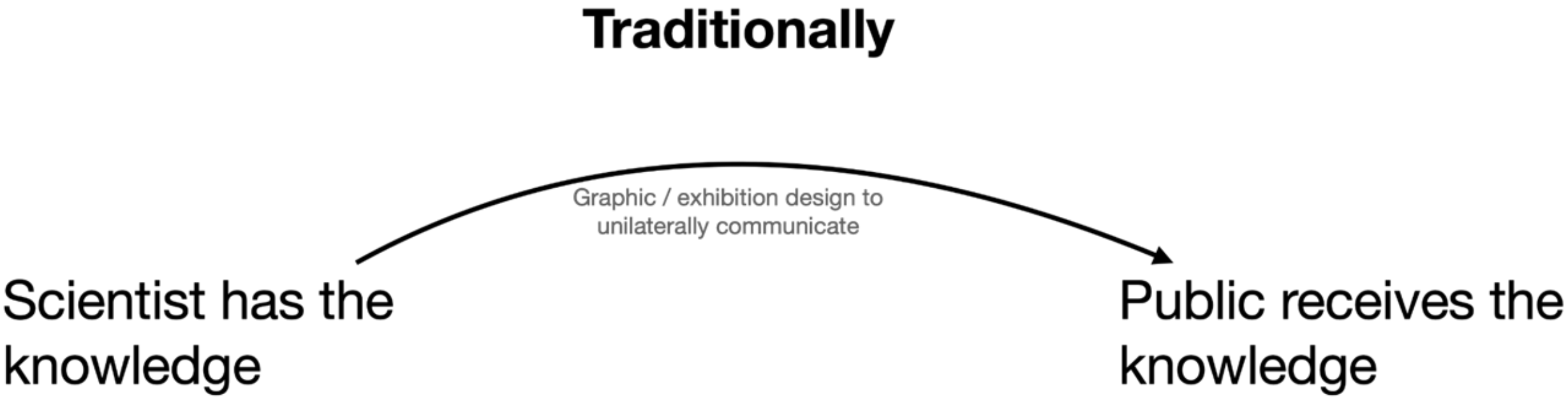
f) regulatory pathways



Acceptance

g) public engagement

Traditional science communication



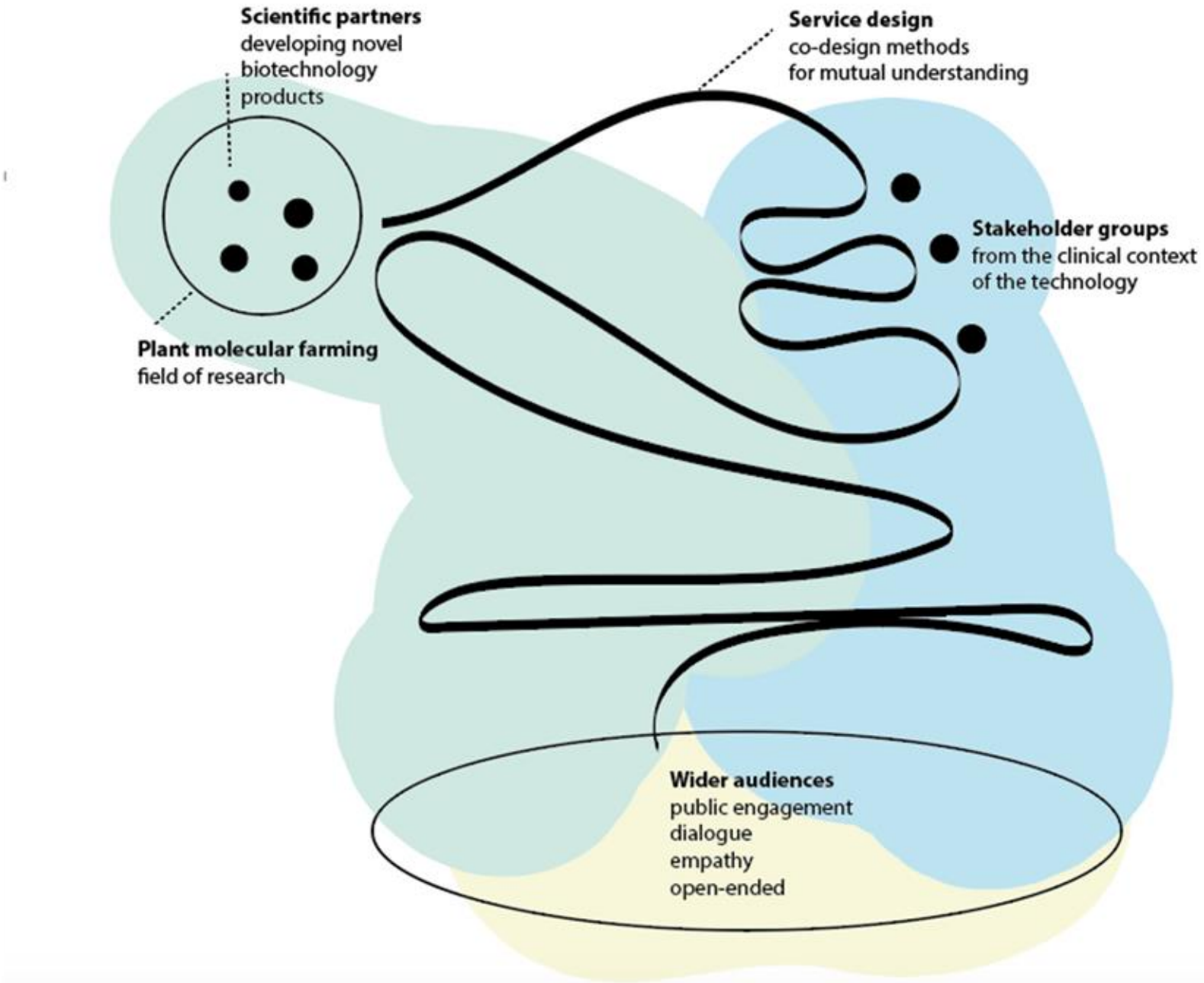
Why Service Design?

Multiple stakeholders

Knowledge co-created and co-interpreted

Bi-directional approach

Everyone is an expert of their own experience



Workshops with Partners





Workshops with partners









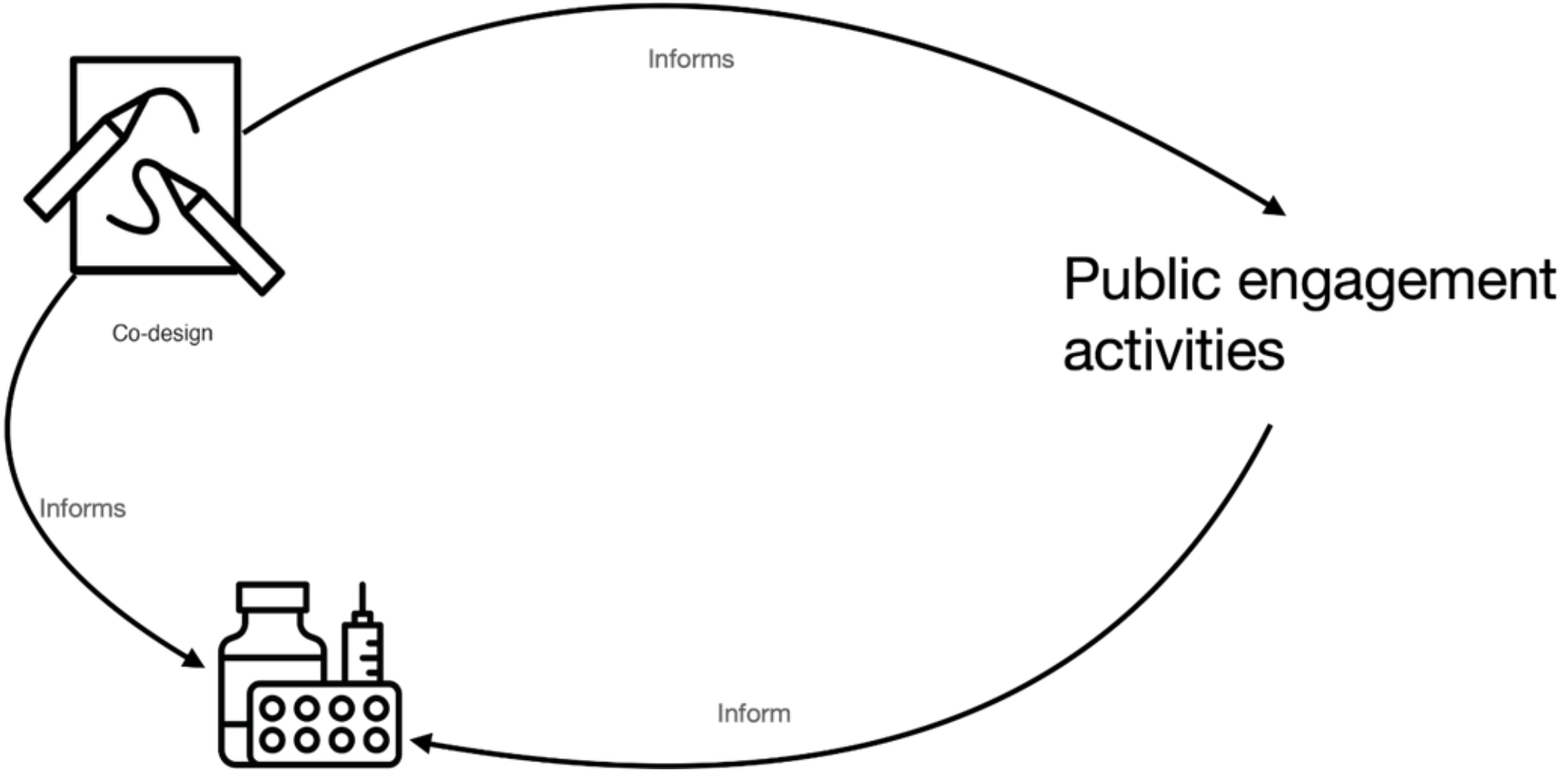




Public Engagement

Co-design with

- Scientists
- Stakeholders
- Wider publics



Workshops with stakeholders



Co-design

What are your experiences?

Establish your current understanding

Careful explanation of the technology

What are the benefits, concerns and questions?

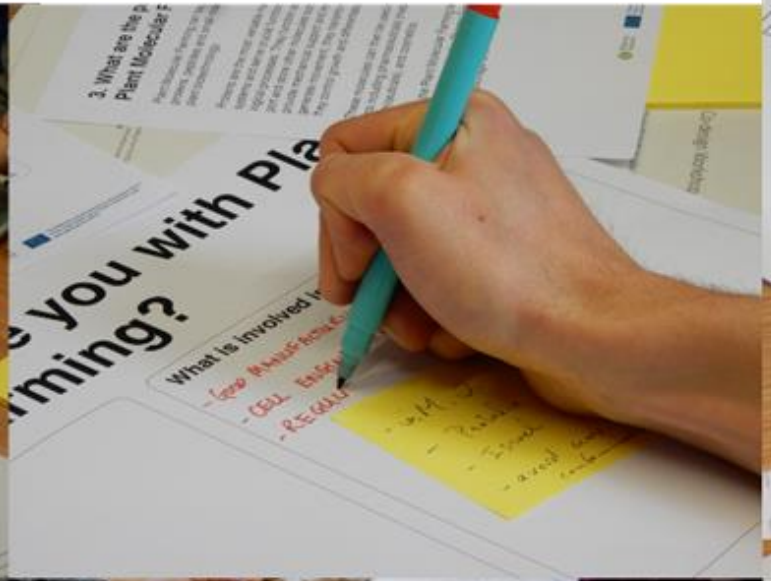
Q&A with researchers

Metabolic Pharmacists



Metabolic Pharmacists





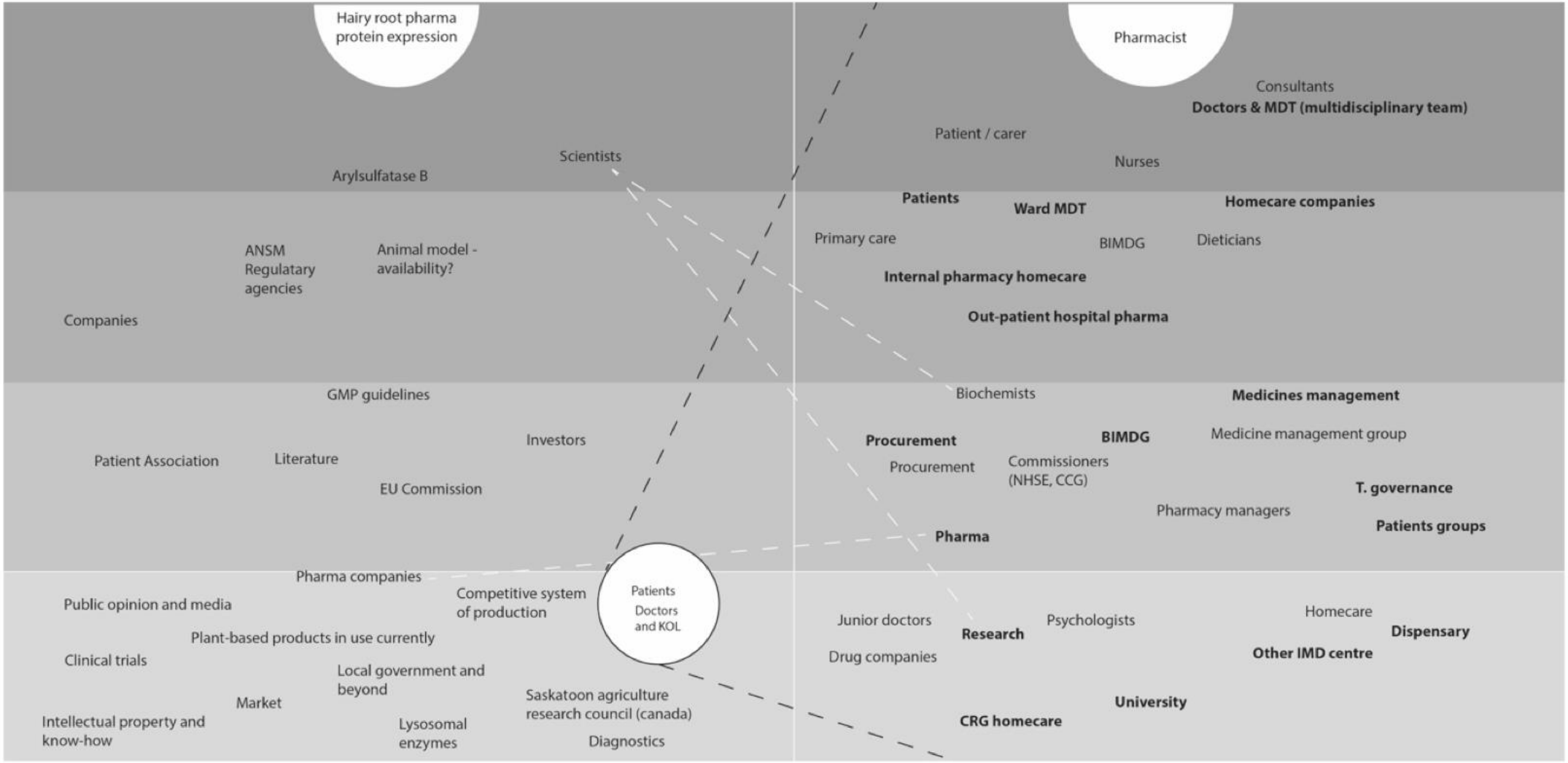








Metabolic Pharmacists



Trust



Pharma Factory Glossary

One of the challenges of discussing Plant Molecular Farming with the general public is the unfamiliar scientific terminology.

During the Pharma Factory project, partners have co-created a Glossary of important terms for understanding Plant Molecular Farming.

Here are eight key terms that could help you understand Plant Molecular Farming, its products and benefits.

Agrobacterium
Agrobacteria is a group of soil bacteria that transfer a portion of their tumour-inducing plasmid (Ti plasmid) DNA (T-DNA) into plant cells as a part of their pathogenesis. They are commonly used to transfer genes into plant cells for transgenesis for stable and transient expression.

Agroinfiltration
Agroinfiltration is a strategy whereby recombinant agrobacteria carrying a binary expression vector in liquid culture is introduced into plant (typically leaf) tissues. The foreign DNA temporarily alters the genome but does not necessarily become a permanent part of the host plant's cell DNA. This can be achieved in 3-5 days so makes it useful for epidemic health scenarios. The plant is not termed transgenic.

Anti-Microbial Resistance
Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to

ELISA (Enzyme-Linked Immunosorbent Assay)
The enzyme-linked immunosorbent assay (ELISA) is an immunological assay commonly used to measure antibodies, antigens, proteins, and glycoproteins in biological samples. Some examples include: diagnosis of HIV infection, pregnancy tests, and Zika virus.

GE-derived product
A product of a process that involves genetic engineering, but the product itself may not contain genetic material.

Genetic Engineering / Genetic Modification
The introduction of a targeted change in a plant, animal, or microbial gene sequence to achieve a specific result.

Good Manufacturing Practice (GMP)
The minimum standard that a medicines manufacturer must meet in their production processes. The European Medicines Agency (EMA) coordinates inspections to verify

Trust

What If You Could Grow Your Own Insulin At Home?

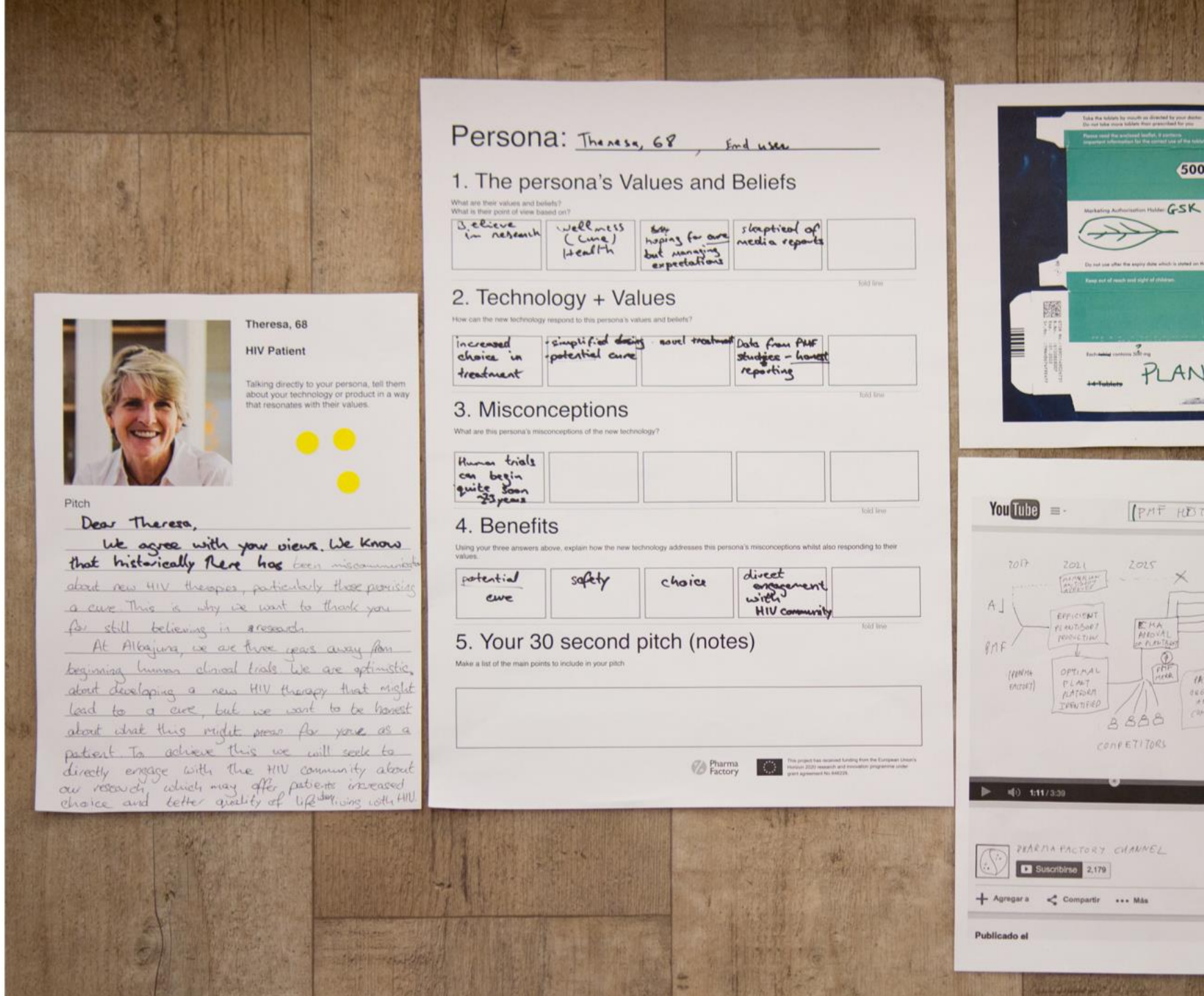
By Clara Llamas, Carlos Canali, Michael Sedbon



Value

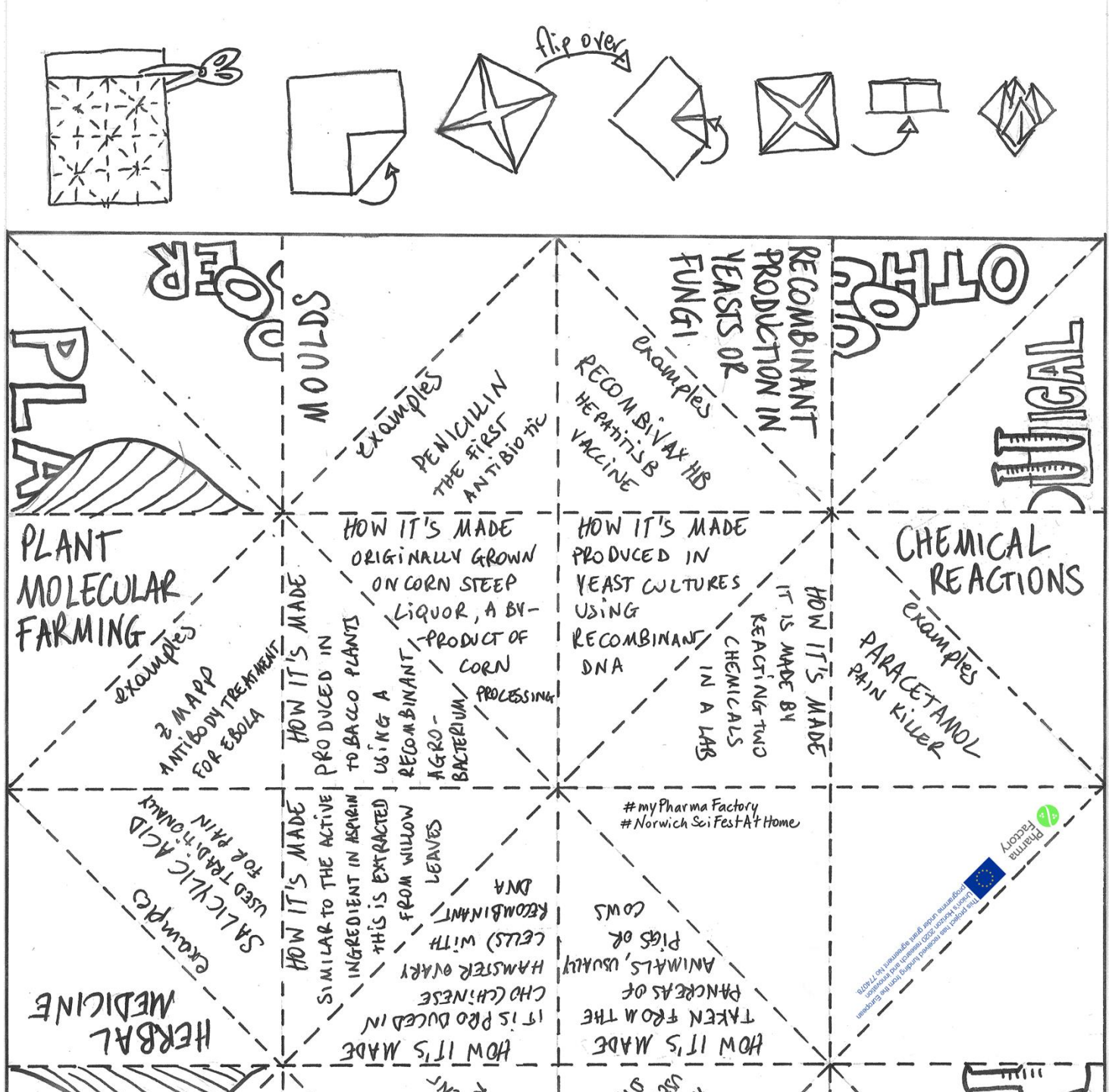
Mutual understanding of the value the new technology brings to each stakeholder

Understand the perception of GM plants within pharmaceutical production and the barriers to acceptance.



Value

Flexible
Problem-oriented
Empathic
Iterative
Participatory
Guided process
Facilitation
Qualitative



What Value Does Design Bring?

Challenging and adding detail to **assumptions** of technology developers

Revealing **values** of the technology to stakeholders that were hidden from scientific partners

Translating and facilitating and shifting mindset from micro context of clinical to macro context of population views

Providing **narratives** or frames to talk to a general public about complex scientific systems

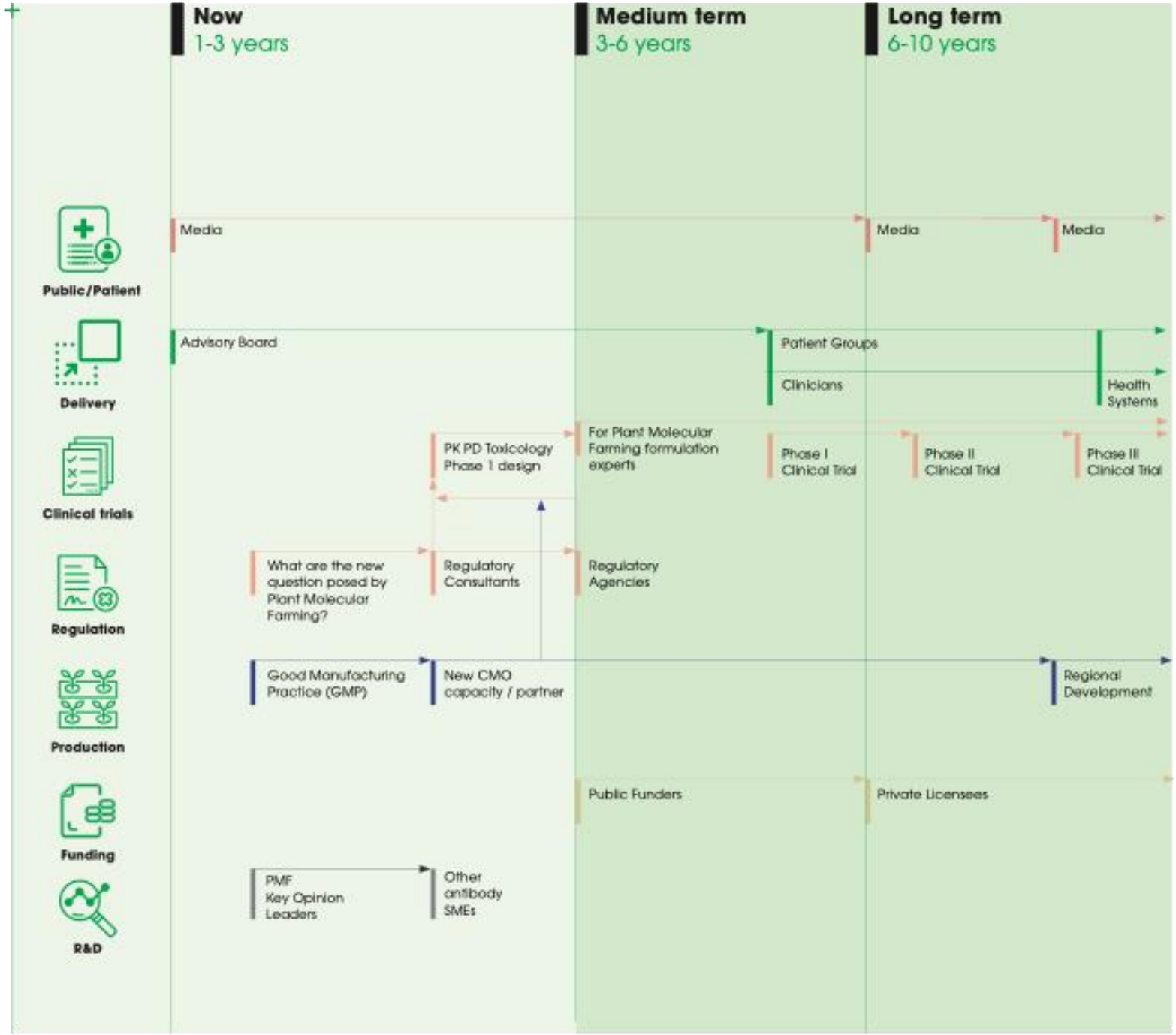


Stakeholder Road Map

This 'road map' was co-created by Pharma Factory scientists during a co-design workshop designed and facilitated by UAL.

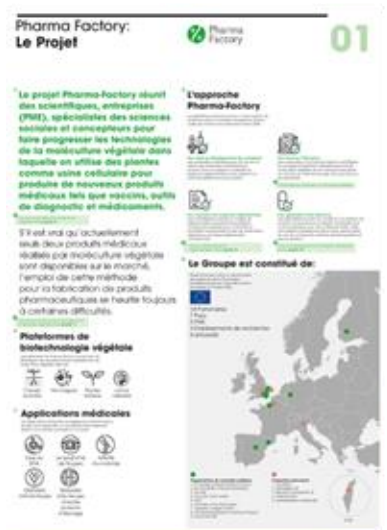
Informed by the past and present experiences of the partners, the workshop aimed to reveal the typical regulatory pathway drugs go through, and thereby identify areas where developers of new technologies, such as those developed through Plant Molecular Farming, would also need to focus.

Moving from drug discovery through the various stages of regulation, to market, the map presents a complex picture of parallel processes, stakeholders and interactions involved in the development, testing and eventual approval of new drugs.



Pharma Factory

Exhibitions






















fête de la Science
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MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR, DE LA RECHERCHE ET DE L'INNOVATION

To know more about this project:

Papers:

Prendiville, A., Hornbuckle, R., Grimaldi, S., Mesquite De Albuquerque, S., Fuller, S. (2023) ***Deep and meaningful: an iterative approach to developing an authentic narrative for public engagement for Plant Molecular Technologies in Human and Animal Health***. In Kole, C., Chaurasia, A., Hafferon, K., Tools & Techniques of Plant Molecular Farming, Springer Nature.

Hornbuckle R, Grimaldi S, Prendiville A. (2020) **Beyond Science Communication: a service design approach to building mutual stakeholder understanding in the development of novel biotechnologies**. In *Proceedings of the 6th conference on Design4Health*. 2: 230-238. Lab4Living, Sheffield Hallam University 2020

Website: https://servicefutures.co.uk/2023/07/15/pharma-factory/

Feminist Futures in Health



Image credit: Team 1: Petrina Gana, Jiayi Zhang (Tina), Maitreyi Mandrekar, Mehal Chandra

Feminist Futures

UAL Team: Silvia Grimaldi and Marion Lagedamont
30 MA Service Design Students

Health

Partners:
European Health Futures Forum, Menopause Project

Daughters of Mars

Focus:
The experience of menopause and menopause education

Work

Partner:
Pilaa: Equality Diversity and Inclusion Training

Focus:
Parental Leave and breastfeeding

Spaces

Partners:
The Gendered City and Women After Dark

FEM:DES network

Focus:
Safety in urban spaces

European Health Futures Forum (EHFF)
Women's Health
Menopause Experience Project

Exploring the Experiences, Perceptions, Meaning and Coping Strategies of Menopausal Women in the Global South and Global North: A Comparative Study

Led By Principal Investigators University of Bern: Dr Janet Michel; Prof Petra Stute

Research project across 20+ countries in Europe, Africa, North America and South America - applying for funding in December 2026

Aim to create a menopause education programme that is adaptable to different contexts and cultures, based on lived experience of menopause. And to inform policy decisions around menopause.

Our involvement at UAL

Public Engagement, Service Design, Anticipatory Futures

Researchers:

Silvia Grimaldi

Alison Prendiville

Marion Lagedamont

30 MA Service Design Students

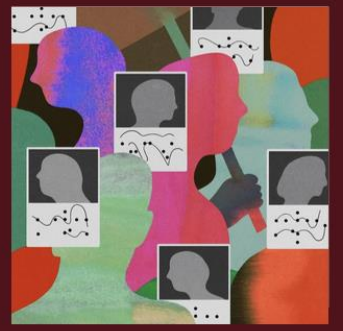
Speculative Design as Research Through Design



Team 2: Shenyue Jian, Eeshanee Badwe, Rashi Jaiswal, Smriti Bhandari, Hui-Chuan Hsu

Horizon Scanning and Evidence Safari



Digital Collective

Medical Self-Rescue

Social media narrative

Community Support

Policy Mandate

Employer Action

Mandatory Support

The 250+ Threshold

Systemic Inequality

Accelerated Onset

Chronic Stress Link

Symptom Disparity

Algorithmic Justice

Male-Data Bias

Risk Forecasting

Evidence-Based AI

Team 3: Thennarasu Sivakumar, Yao Yao, Shrawani Malkar, Srishti Madan

What if?

What if we treated menopause how we treat fertility?

What if we normalised and fought for menopausal healthcare?

Fictional Future Worlds


DAILY NEWSPAPER OF THE YEAR

THE TIMES

Thursday, 6 February 2031 | thetimes.co.uk | No 10427

NHS introduces the new Menopause Exemption Certificate

By Eleanor Hughes Health Editor

The NHS and Government have today launched the Menopause Exemption Certificate, a new scheme in England that will allow eligible patients to receive hormone replacement therapy (HRT) without paying prescription charges.

The initiative, which comes into force next month, is designed to remove cost barriers and improve access to HRT for women who continue to experience significant menopausal symptoms.

The scheme follows the recent passage of the Menopause Exemption Act through Parliament, which cleared both Houses last month after cross-party backing.

Under the scheme, women can apply for a digital certificate via their GP practice or participating pharmacies. Once approved, the certificate exempts patients from prescription charges for all NHS-supplied menopausal hormone therapy, including tablets, patches, gels and implants.

The NHS says the move follows evidence that more than half of women delay or stop treatment because of cost, despite HRT being the most effective treatment for many menopausal symptoms.

Certificates will be valid for 12 months and renewed annually. The eligibility criteria are based on NHS clinical guidance and focus on symptom impact rather than age.

Health Secretary Louise Hartley said the scheme marked a "major step towards fairer healthcare for women," adding: "No one should have to choose between managing debilitating symptoms and meeting everyday costs. This certificate puts choice and control back in women's hands."

The Royal College of GPs and menopause charities welcomed the announcement, calling it a long-overdue recognition of menopause as a health priority.

More information and registration details are available via the NHS App, GP practices and nhs.uk/menopause.

TECH

The rotten apples

Fake Apple Rhythm+ Patches Flood Market, Causing Severe Chemical Burns and Ulcers

By Daniel Price, Technology Correspondent

The rotten apples- Fake Apple Rhythm+ Patches Flood Market, Causing Severe Chemical Burns and Ulcers

The Apple Rhythm+ system has revolutionized menopausal and endocrine care.

However, unable to afford these proprietary smart patches has driven desperate consumers to online gray markets, where highly convincing counterfeits have been circulating at half the retail price.

These aren't just placebo stickers; they are actively dangerous - chemical hazards, warned Dr. Aris Thorne, Director of Dermatology at UCSF Medical Center. "The authentic Apple patches use a highly regulated, bio-adaptive hydrogel. These counterfeits are using industrial solvents and corrosive acrylic resins mixed with unregulated synthetic estrogens."

Patients using the fake patches report an intense, burning itch within four hours of application.

How to spot the counterfeits

The Peeling Edge
Fake patches curl and peel within hours.

The Sync Lag
The Apple Health app often shows a static hormone delivery rate rather than real algorithmic adjustments.

If you suspect you've used a fake patch, stop using it immediately and seek medical advice.

Report it at mhra.gov.uk.

Because the counterfeit patches contain NFC chips, the Rhythm+ bracelet registers a successful connection. But left on the skin, the toxic adhesive causes rapid contact dermatitis, which quickly degrades into deep tissue ulcers that can take months to heal.

So... when's the good news?

Bodyform. From your first to your last.


ection:GDN 1N PaGe:1 Edition Date:200302 Edition:01 Zone:S Sent at 1/3/2020 21:20

Sara Osei Don't Look at my bracelet

Three in a row City complete Carabao Cup hat-trick Sport

The Guardian

Monday 27 April 2038 £2.00 From £175 For Subscribers

The Hormone Paradox

Medical acces met a culture that refuses to age. Now both are paying the price

BY SARAH JETKINS HEALTH EDITOR

By the time Kimmy K was found unresponsive in her Los Angeles home, the narrative had already been written: ageless, untouched, immune to time.

What followed: blood clots, a pulmonary embolism, and confirmation of long-term unsupervised hormone use , is not just about one woman's choices. It is about a system. And it is unfolding on both sides of the gender divide.

They come in thinking they've optimised themselves," Dr Moore says. "What they've done is tell their endocrine system to switch off. In some cases, that switch turns off

Access Was the Point. Then Culture Took Over.

The 2036 Menopause Exemption reforms made HRT free and widely accessible across England. It was overdue a correction to decades of neglect in women's health. But access collided with culture. What was designed as treatment is increasingly used as enhancement. Products like HormaPatch and RejuvaX promise "age reversal," marketed as wellness but operating outside regulated care. Many women now move between prescription, private clinics, and grey markets, building their own hormone regimes.

And they are starting younger some in their early thirties drive by a simple fear: never to look older.

Hormones, once medical, are becoming cosmetic. Influencer culture accelerated this shift.

Hayley Summers, HayleeHayley to 4.2 million followers, promoted oestrogen patches as "preventative ageing" from age 31. Years later endometrial hyperplasia, life-threatening complications, and the loss of two pregnancies. Her story briefly unsettled the narrative. Not enough to change it.

THE SILENT EPIDEMIC:

Young men and testosterone

Less discussed is the parallel trend among men. The HormoneHack subreddit has 2.3 million members.

At the top: a grey-market supplier offering testosterone microdosing kits for £34 no prescription, no consultation. A review reads: "confidence is insane." What it doesn't mention: palpitations, acne scarring, and the fact the user is 24.

Motivations vary: muscle growth, faster recovery, cognitive edge, or access for trans men excluded from formal care. Different reasons. Same mechanism.

Dr. Priya Mehta at King's College Hospital has treated multiple cases of secondary hypogonadism the body shutting down its own hormone production after prolonged external use.jp. "They think they're optimising themselves. In reality, they're switching their system off sometimes permanently."

The consequences are serious: mood instability, clotting risks, cardiac damage, infertility. For many, stopping is worse than never starting, the body no longer knows how to function alone.

These products exist in a regulatory gap: not classified as medicine, not monitored, widely sold through wellness platforms using the language of legitimate care.

SUSTAINABLE CITIES: VISION 2040

The urban design for public spaces that saved women. Full analysis - Pg9

TWELVE YEARS ON, THE NUMBERS FINALLY SPEAK FOR NHS

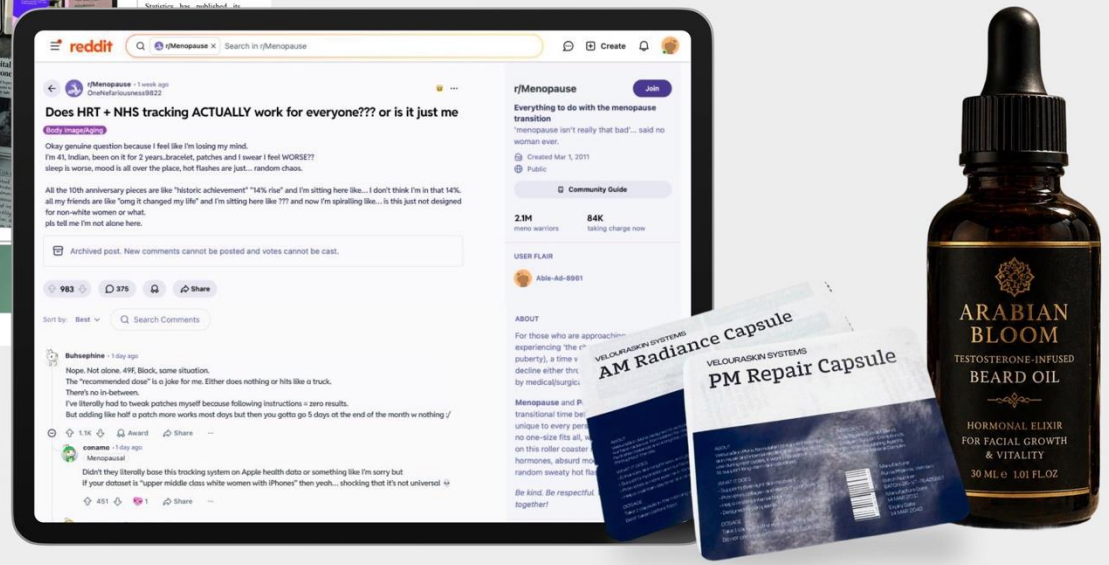
Little more than a decade after the NHS Menopause Pathway launched, the data is telling a story policymakers never expected and one they can no longer ignore.

When it launched in 2026, it was met with cautious optimism in clinical circles and outright scepticism in Treasury ones.

The Office for National

ARTS FESTIVAL 2038:
Nation makers
Final Weekend, full pull out guide

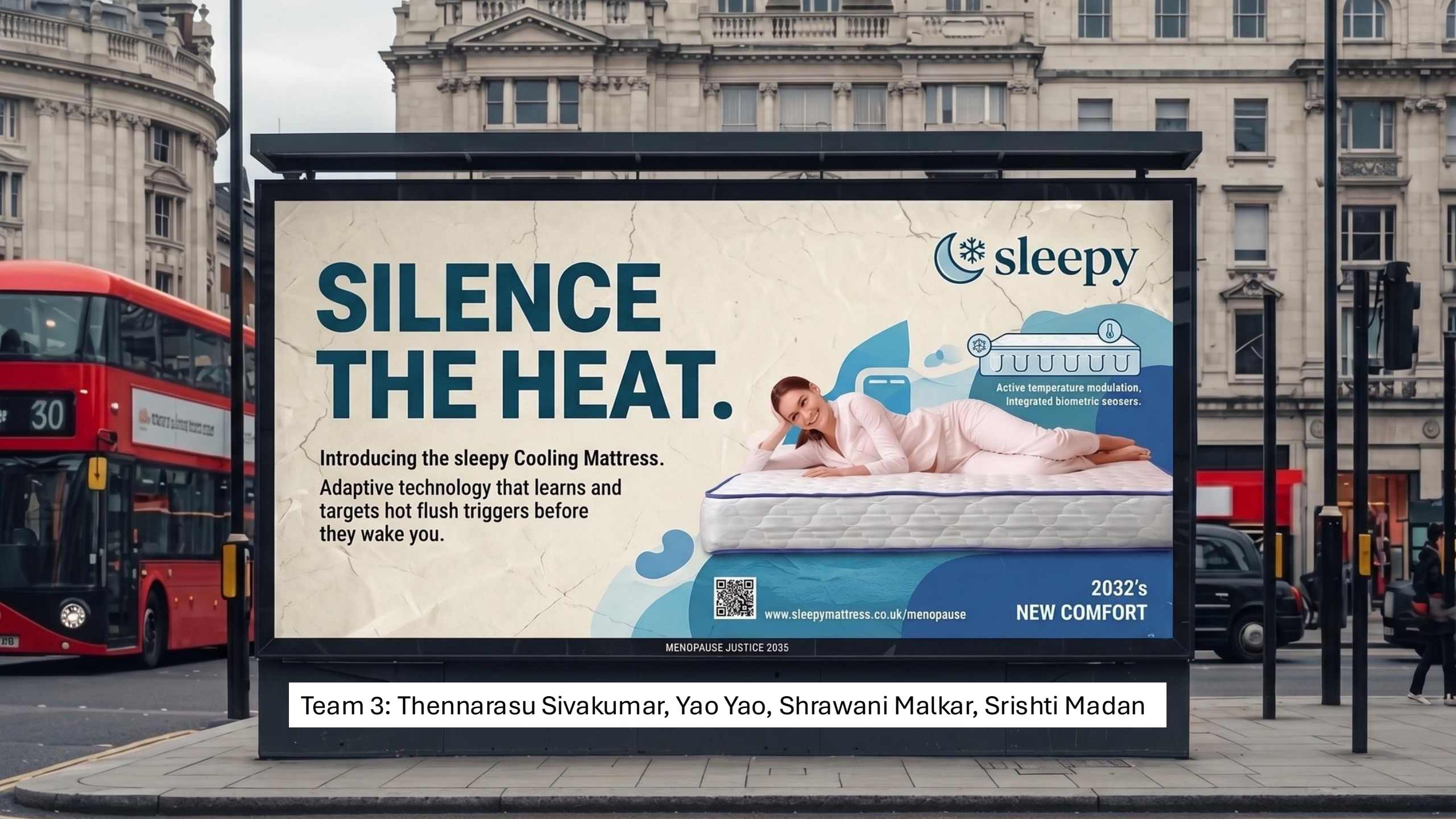




Team 4: Arunima Dhawan, Saee Mahajan, Yingze Luo (Elliott), Anisha Jhaveri, Haerin Lee



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Team 3: Thennarasu Sivakumar, Yao Yao, Shrawani Malkar, Srishti Madan



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Diegetic Prototypes



Menopause Intelligence Team 4: Arunima Dhawan, Saee Mahajan, Yingze Luo (Elliott), Anisha Jhaveri, Haerin Lee

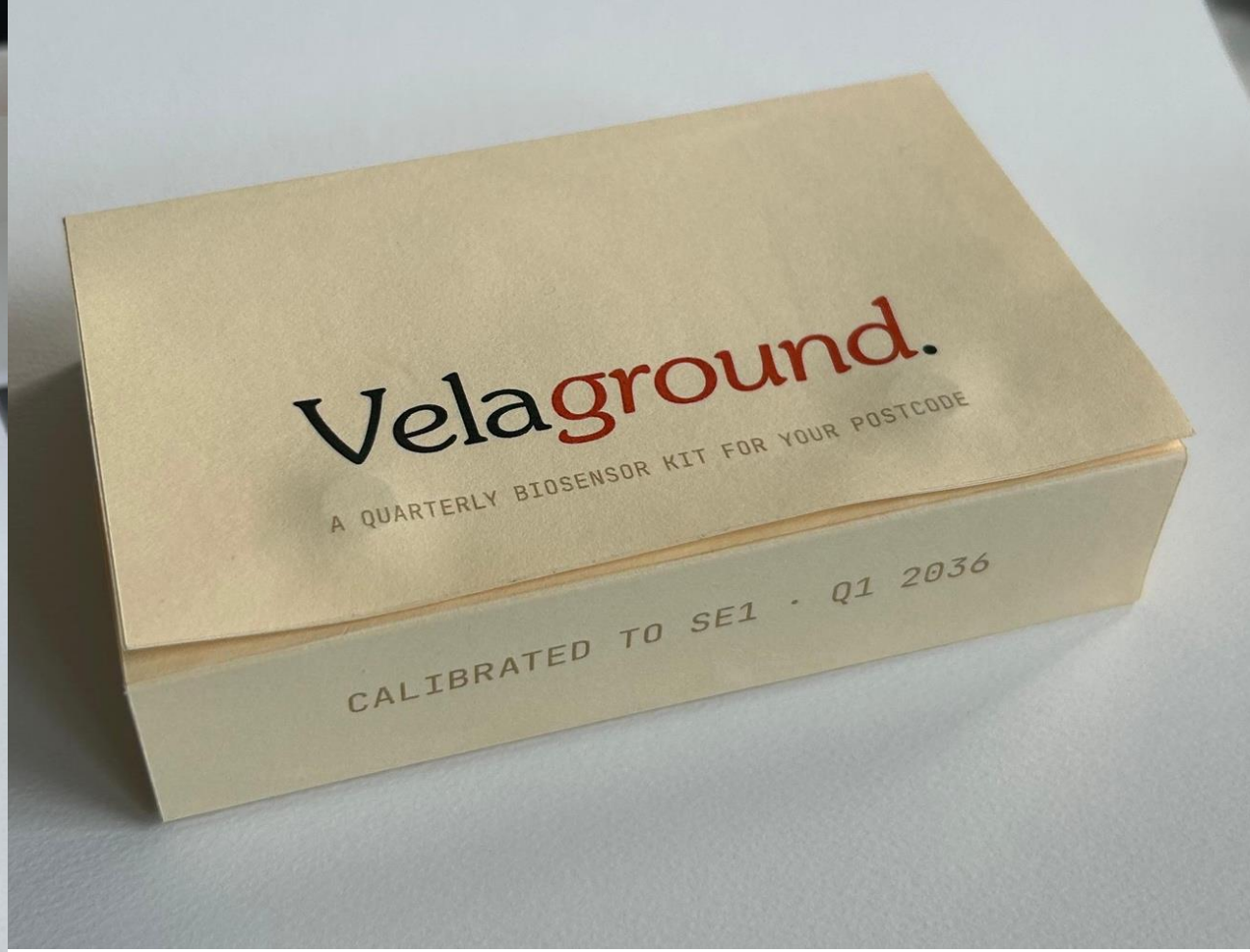


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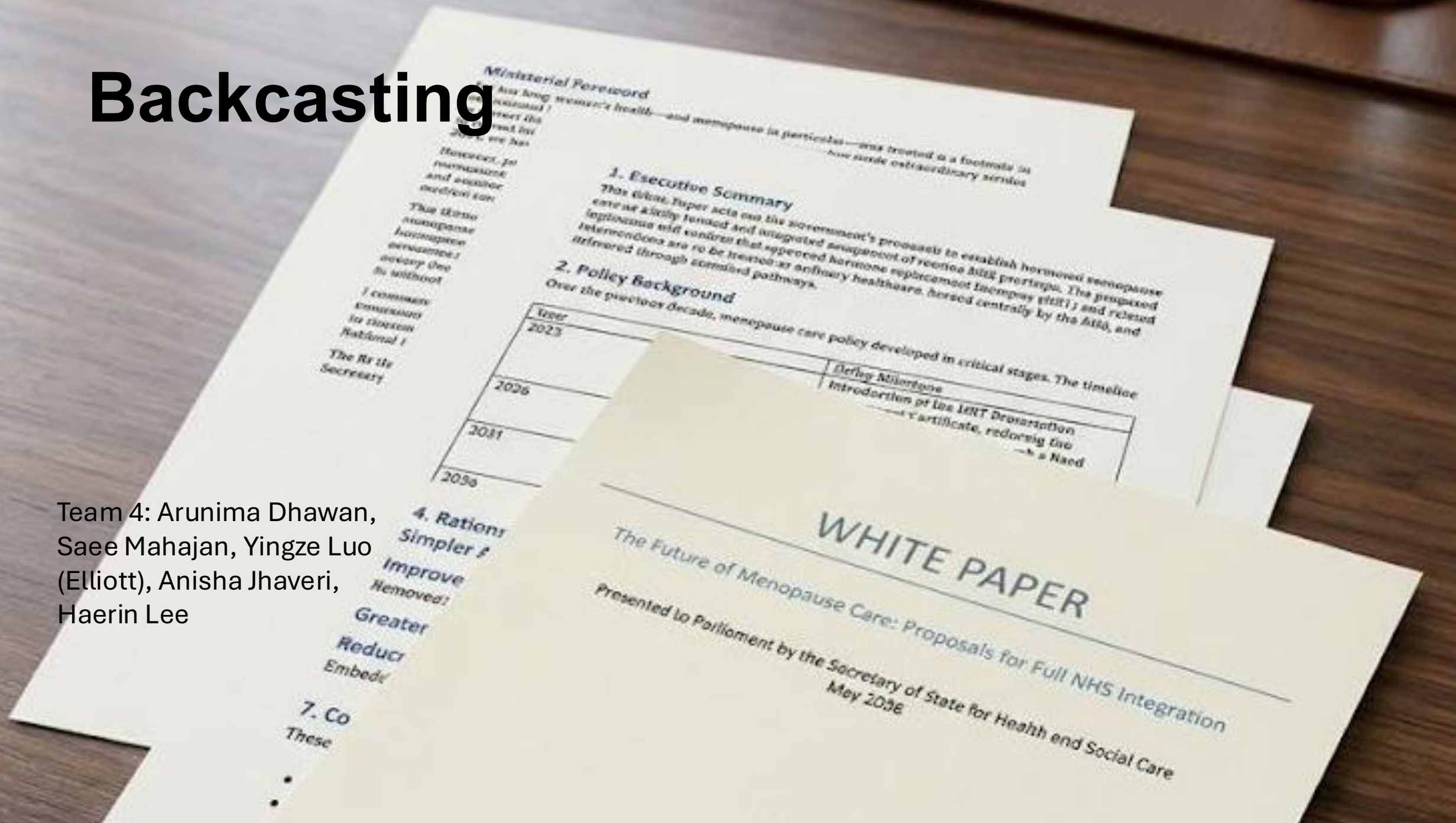
Team 4: Arunima Dhawan, Saee Mahajan, Yingze Luo (Elliott), Anisha Jhaveri, Haerin Lee





Team 3: Thennarasu Sivakumar, Yao Yao, Shrawani Malkar, Srishti Madan

Backcasting



Team 4: Arunima Dhawan, Saee Mahajan, Yingze Luo (Elliott), Anisha Jhaveri, Haerin Lee

Testing and Iterating









Team 4: Arunima Dhawan, Saee Mahajan, Yingze Luo (Elliott), Anisha Jhaveri, Haerin Lee

Next Steps Health Strand:

Exhibition Friday 5th June (4 to 6 PM)
At the Treehouse in Elephant Park SE17 1GW

2x Student Major Projects – experiment with the methodology

Overarching Menopause Project - European Health Futures Forum
Research project - applying for funding

Impact:
Our work is impacting the methodology for public engagement

Thank you and Q&A

Silvia Grimaldi

Professor of Service Design and Transformation
Co-Lead and Co-Founder Service Futures Lab

https://servicefutures.co.uk/public-health/



ual: london college of communication

service futures lab