

# FALLING WALLS SCIENCE SUMMIT

## KEY RESULTS OF THE ROUND TABLE

### “PRECISION HEALTH: ADVANCING MEDICINE AND CARE WITH AI”

— Beyond the “blueprint” myth – multimodal measurement plus AI to decode disease.

Medicine is still organised around late, phenotype-based diagnosis, while the data and AI needed for earlier, mechanistic decisions sit in silos. The panel’s direction of travel is clear: standardise how we capture human data, connect modalities into a usable patient model, and redesign trials and care pathways around it.

Precision health means integrating multimodal, human-first evidence. From molecular profiles and imaging to exposome, wearables and longitudinal records and using AI to make it actionable at the bedside. That requires fixing hospital pre-analytics, aligning data standards, and shifting trials from one-size-fits-all to mechanistically stratified designs that treat the right patients earlier.

### THE PANEL CALL TO ACTION:

#### 1 — Build a shared “patient landscape” model that links cells to clinics.

Create an interoperable foundation model that fuses molecular, imaging, physiological and textual data across scales; use common schemas and federated learning so hospitals, biobanks and industry can contribute without moving raw data.

#### 2 — Go human-first in discovery and use animal models selectively with AI transfer tests.

Prioritise organoids, organs-on-chips and well-curated human cohorts for mechanism finding; when animal work is used, apply cross-species modelling to predict what will and won’t translate before committing to costly trials.

#### 3 — Redesign trials around mechanisms, not broad phenotypes.

Stratify by multimodal biomarkers and immune or molecular signatures. Use adaptive designs and Bayesian monitoring to learn faster, cut non-responders early, and align endpoints with predicted trajectories from the patient model.

#### 4 — Operationalise prevention with longitudinal and exposome data.

Integrate wearables, lifestyle and environmental context into routine care; reimburse validated early-risk interventions (e.g., pre-symptomatic immunomodulation) and automate outreach via EHRs when trajectories indicate impending disease.

#### 5 — Fix hospital pre-analytics to make clinical data AI-ready.

Standardise blood draw-to-analysis workflows, time limits and sample handling so multi-omics and single-cell readouts are reproducible at scale; embed consistent, reproducible hospital workflow into procurement, accreditation and electronic health records (EHR) order sets to ensure compliance.

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