

FALLING WALLS SCIENCE SUMMIT

KEY RESULTS OF THE PLENARY TABLE

“WILDFIRE RESILIENCE: HARNESSING DATA, MODELS, AND AI”

— Open data and indigenous knowledge are key to future fire safety.

Wildfires are becoming faster, more destructive and harder to predict, exposing the limits of a suppression-first mindset. To avoid simply “losing more slowly”, data, models and artificial intelligence (AI) must help shift societies towards proactive prevention, smarter adaptation and community-centred resilience.

As fires intensify worldwide, our ability to observe the Earth, model fire spread and integrate vast datasets is also expanding. The real task now is to turn this information into timely, locally relevant insights that support early warning, safer land-use decisions, cultural and prescribed burning practices, and long-term ecological stewardship. In doing so, communities, researchers and agencies can build a future in which people and nature are better able to live with fire.

THE PANEL CALL TO ACTION:

1 — Shift from suppression-only responses to risk reduction and adaptation.

Use data, models and AI to target fuel management, land-use planning and community design. The goal is that more homes, infrastructures and ecosystems can safely withstand fire rather than relying on increasingly fragile last-minute suppression.

2 — Build shared, open wildfire data and modelling infrastructure.

Connect satellite constellations, ground observations and community-generated data into interoperable, open platforms with clear governance so that agencies, researchers and at-risk regions worldwide can access information in real time.

3 — Co-create tools with communities and indigenous knowledge holders.

Design early-warning systems, risk maps and planning tools in partnership with local experts, integrating cultural burning practices, traditional land knowledge and local languages. Ensure that AI and models genuinely support decisions on the ground instead of imposing external solutions.

4 — Invest in turning scientific insights into operational decisions.

Fund interdisciplinary teams and “middle actors” who can translate complex models into actionable workflows for fire services, municipalities and land managers. Embed training, standard operating procedures and feedback loops that keep tools scientifically rigorous and operationally useful.

This event is supported by Gordon and Betty Moore Foundation and assembled in the framework of the Falling Walls Science Summit 2025 in Berlin. The Falling Walls Science Summit is a leading international, interdisciplinary, and intersectoral forum for scientific breakthroughs. It commemorates the fall of the Berlin Wall and aims to promote dialogue between science and society.

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