KEY RESULTS OF THE ROUND TABLE

"LONG-TERM INVESTMENT IN QUANTUM RESEARCH AND EDUCATION"

NEW YORK UNIVERSITY

— The long-horizon strategy shaping quantum's next decade.

Quantum needs sustained backing, not bursts of hype. The panel stresses that quantum computers already exist, but the next major step is achieving better results than classical algorithms – expected in roughly a year. Only long-term commitment to fault tolerance, domain-driven algorithms, shared infrastructure and talent will turn today's prototypes into reliable tools for science, industry and security.

Quantum information science has moved from thought experiment to working machines that already tackle problems beyond what classical simulators can handle, even if clear commercial advantage is still ahead. The coming decade will hinge on driving down errors, discovering useful algorithms on real devices, building international ecosystems around data centres and hubs, and widening the talent base beyond a narrow group of physicists.

THE PANEL CALL TO ACTION:

1 — Accelerate error correction to unlock fault tolerance.
Demonstrate quantum error correction in hardware and drive error rates low enough for commercially valuable algorithms, using open benchmarks that compare modalities. Co-fund multi-partner demonstrators and publish shared roadmaps so engineering progress, not hype, guides investment decisions.

2 — Shift investment to algorithm discovery embedded in domains.
Create long-run programmes where mathematicians and domain experts (chemistry, optimisation, finance) co-design quantum algorithms on real hardware. Fund access credits and working groups so they can iterate on-device, benchmark against classical baselines and publish reproducible, incremental advantages.

3 — Build and connect the talent pipeline where collaboration happens.
Place quantum systems in shared hubs and data centres close to user industries, linked through common tools so researchers, start-ups and students can work on real hardware together. Expand conversion pathways and industry-aligned training so engineers, computer scientists and domain experts gain just-enough quantum skills.

4 — Strengthen researcher-led international collaboration.
Support cross-border working groups, shared benchmarks and open-access testbeds so academic and industry teams can compare modalities, co-develop algorithms and accelerate progress without duplicating effort.

This event is supported by the New York University 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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