

Quantum Technology for Health and Life Sciences

Quantum Technology

A four-hour course on quantum technology in health and life sciences. We cover quantum computing for drug discovery, quantum sensing in medicine and the protection of health data, with the status of each use case and what to prepare now.

Duration

4 hours

Short professional course

Level

Executive

No prerequisites

On-demand fee

US\$399

Online on-demand

Evaluate quantum claims for health and R&D.

What you will learn

- ✓ Explain what quantum computing, sensing and networking can and cannot do for health and life sciences today
- ✓ Read a resource estimate for a target molecule and judge when it might become feasible
- ✓ Tell a hardware result from an announcement or an estimate, and a gain over earlier quantum methods from a gain over classical ones
- ✓ Identify the molecular problems in your pipeline that are candidates for quantum simulation
- ✓ Assess quantum sensing devices by their clinical evidence and regulatory status
- ✓ Plan skills, partnerships and data protection for the next five years

Who should attend

R&D and innovation leads, computational chemists, data scientists, executives and program managers at pharmaceutical, biotech and medical-device companies. Also useful for hospital and research-institute leaders weighing quantum partnerships, and for investors and consultants in life sciences.

Prerequisites

None. No technical background is assumed.

Why Quantum Academy

Quantum Academy teaches from *Quantum Systems Integration*, written by the course author, and faculty experience with quantum engineering and integration teams. Hardware results, announcements and resource estimates are clearly distinguished.

What you will study

5 modules · 4 hours · No exam

01 Judging Quantum Claims – 45 minutes

Separate hardware results, announcements and estimates; distinguish physical from logical qubits. Test classical baselines, including why AstraZeneca's reported speedup over earlier quantum runs does not establish an advantage over classical methods.

02 Quantum Computing for Drug Discovery – 75 minutes

Cover P450 enzymes, photosensitizers, protein–ligand binding, phase estimation, hybrid methods and machine learning. On published estimates, simulating a P450 active site needs roughly 1,000 to 4,900 logical qubits, and we expect the first partial simulations around 2031–2033. Read resource estimates and ask for classical baselines.

03 Quantum Sensing and Health Data – 45 minutes

Review brain-imaging magnetometers in clinical studies, nanodiamond diagnostics and approved hyperpolarized xenon lung MRI. Cover long-term health-data protection and why agencies recommend post-quantum cryptography over QKD.

04 What Pharma and Health Systems Are Doing – 30 minutes

Review Cleveland Clinic, RIKEN, IBM, AstraZeneca, Moderna, Boehringer Ingelheim and Novo Nordisk Foundation programs. Distinguish hardware results, announcements, estimates and clinical studies.

05 Preparing Now – 45 minutes

Identify molecular systems where strong correlation blocks a decision. Score value, classical difficulty and quantum resources; plan hybrid workflows, partnerships and validation discussions. Draft a one-page brief for R&D leadership.

Formats and fees

Online on-demand	US\$399
Live online	US\$599
In person	US\$799
Private team training	Custom quote

What is included

- Course handbook: full material with written instructor notes.
- Use-case table with sources and results labelled as demonstrated, announced or estimated.
- PDF copy of *Quantum Systems Integration*, written by the course author.
- 180 days of access to the online on-demand course.

Upon completion, you receive a Quantum Academy certificate of completion. It confirms that you completed the course and is separate from Quantum Academy's professional certifications.

Explore the course

See dates and enroll on the course page.

quantumacademy.com/courses/quantum-technology-health-life-sciences/



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