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Exploring Quantum Computing with DTBL

A Practical Guide for Biotech and Biopharma Teams
DeepTech Bio Lab™ | CCRM

Quantum computing is an emerging technology with the potential to complement existing computational approaches used in biotechnology and biopharmaceutical development. **DeepTech Bio Lab** (DTBL) helps organizations explore whether advanced computation – classical, quantum or hybrid – can meaningfully improve how complex biological, manufacturing or operational problems are addressed.

This guide is intended to be educational and practical. Its purpose is to help you determine whether it would be valuable to have an initial conversation with DTBL about a potential collaboration.

What Makes a Good Quantum or Hybrid Project?

Start with a well-defined problem

Successful projects typically begin with a clearly articulated challenge rather than a predefined technology solution. These challenges often involve complexity that is difficult to manage with classical tools alone.

Meaningful impact

Strong use cases are tied to outcomes that matter—such as shorter development timelines, improved yield or robustness, better prediction, or higher confidence decision-making.

Computational complexity

Quantum and hybrid approaches are most promising where problems scale combinatorially, involve many interacting constraints, or require repeated optimization or simulation.

Any level of quantum experience is acceptable

You do not need in-house quantum expertise. Many partners work with DTBL to explore whether quantum methods are relevant, not to implement them on their own.

Example Opportunity Areas

Illustrative areas where quantum or hybrid methods may be explored include:

- Optimization in bioprocess development or manufacturing scheduling
- Molecular or cellular system modelling with large parameter spaces
- Multi-variable optimization in quality, analytics or supply chains
- Large-scale design-space exploration where classical approaches face scaling limits

How DTBL Works with Partners

DTBL follows a structured but collaborative approach designed to support exploration without requiring large upfront commitments.

	Initial Conversation	**Focused Exploration**	**Technical & Strategic Review**	**Agreeing on a Path Forward**
Your Team	Share challenges & goals	Discuss data & constraints	Review feasibility & options	Align on next steps
DTBL & Partners	DTBL overview & examples	Structured use-case framing	Internal capacity assessment	Recommend pilot, landscape or revisit

A Transparent, Supportive Process

Internally, DTBL uses a structured review process to ensure that projects are technically feasible, responsibly scoped, and aligned with partner objectives. This process exists to clarify expectations and maximize value, not to act as a barrier to collaboration.

Is This You?

☐ We face a complex problem that is hard to solve with current tools
☐ The challenge affects development speed, cost or decision quality
☐ We are curious whether advanced computation could help
☐ We value structured, collaborative exploration

If several of these resonate, an initial conversation with DTBL may be worthwhile.

Interested in Exploring Further?

If you are facing a complex computational challenge and are curious whether advanced computation could help, we encourage you to start with an informal conversation. Even if a project is not ready today, DTBL is happy to provide perspective and revisit opportunities as your needs evolve.

Please contact partners@deeptechbiolab.com.