IT DOESN'T HURT TO ASK...

An MIT xPRO Guide to Discussing Professional Development with Your Employer

HOW TO USE THIS GUIDE

1. Take a look at the *Quantum Computing Fundamentals* program page. Note which topics and learning outcomes align with your manager's goals.

2. Look at the "Quantum Computing Stats" on page two and "Common Objections" on page three to help augment your letter, or support a follow up conversation.

3. Customize the yellow areas high-lighted in the template on page 3 and send it to your manager.

4. Have any other questions about the course that might help your case? Email us! xpro@mit.edu.

QUANTUM COMPUTING STATS

Bring these facts and figures into the conversation!

1 **More organizations are using quantum computing, and that number will only increase.** Gartner included quantum computing in its "Top 10 technology trends for 2019" and predicts that by 2023, 20% of organizations will be budgeting for quantum computing projects. (Source)

2 **The market for enterprise quantum computing is worth billions.** The market for enterprise quantum computing is reported to rise from $39.2 million in 2017 to $2.2 billion annually by 2025. (Source)

3 **Quantum computing skills are in high demand.** Quantum computing job listings nearly doubled in 2018. (Source)

4 **Cryptography is changing.** Traditional computers find it impractical to break encryption that uses very large prime number factorization, such as the famous RSA cryptosystem. With quantum computers, using instructor Peter Shor's algorithm, this decryption could become trivial, leading to future challenges to the security of our digital lives and assets.

5 **Optimization is ubiquitous, spanning financial to transportation industries.** Consider the possibilities quantum computing may bring to traffic control, supply chains, or portfolio optimization.

6 **Quantum computers will be able to simulate systems that are completely intractable on conventional computers.** This has potential impact on pharma, chemical, materials, and energy industries. This is where the true power of QC will shine!

Want to convince decision-makers that your team needs to be quantum-ready?
Send them this blog post: https://curve.mit.edu/ask-an-mit-professor-why-your-business-should-build-a-quantum-ready-workforce-now.

COMMON OBJECTIONS

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Your employer will have questions. Let's help you answer them.

OBJECTION	RESPONSE
"It costs too much."	It might cost more to neglect workforce training. Companies that prioritize employee development make median revenue of $169,100 per employee while companies that don't make less than half of that: $82,800 (Source)
"It will take you too much time and distract you from your work."	This program is designed for professionals, with an estimated time commitment of 4-6 hours per week for each 4 week course. Learning a new skill online does take time, but the format is flexible, offering learners the ability to watch lectures and read case studies on their own schedule. Plus, the time a company invests in training will save them time in the long run. A study by the National Center on the Educational Quality of the Workforce (EQW) supports this, finding that a 10% increase in educational development produced an 8.6% gain in productivity. (Source)
"How is this different from those other online courses?"	MIT xPRO courses are created and taught by MIT faculty, and are optimized for learners who are full-time professionals. The program curriculum was created by faculty from the MIT Deparment of Electrical Engineering, and its instructors include 2018 Micius Quantum Prize winner Peter Shor and Isaac Chuang, who wrote a book on quantum that is considered a standard text on the subject. Introduction to Quantum Computing is the first course in the program, and includes hands-on practice with a simple quantum algorithm using the IBM Q experience.

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Copy and paste the following text into an email to your manager or HR professional.

Hi [MANAGER'S NAME]

I would like to submit a request for professional development through MIT xPRO's online program: *Quantum Computing Fundamentals*. These courses offer training that I believe is directly relevant and beneficial to what we're trying to accomplish within [COMPANY NAME].

This two-course bundle will help me establish a foundation of knowledge for understanding quantum computing. I will be introduced to the history of QC and its implications versus classical computation and get an understanding of how the quantum computer could have profound applications and change the very way we think about information.

The program cost is $2,500 and the duration is from [DATES]. This program is designed for full-time working professionals so the schedule will work with my current position.

For more information, visit:
https://learn-xpro.mit.edu/quantum-computing

Thank you for considering my training request,

[YOUR NAME]