While Everyone Watched IBM's Stock Crash, the Company Made a Significant Quantum Move

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Key Takeaways

- IBM's record post-earnings selloff overshadowed its acquisition of HRL Laboratories, adding silicon spin qubit technology that strengthens its long-term quantum computing strategy.
- By combining HRL's silicon spin qubits with its new Anderon foundry, IBM is building a multi-modal quantum platform designed to improve scalability across computing, sensing and networking.
- For investors, IBM's expanding quantum capabilities reinforce the long-term case for diversified exposure through the WisdomTree Quantum Computing Fund (WQTM).

July 2026 will be remembered as a turbulent month for IBM shareholders. On July 14, the company released preliminary second-quarter results that fell short of analyst expectations, sending its stock down more than 25%, the largest single-day percentage decline in IBM's recorded history, surpassing even its drop on Black Monday in October 1987.1 The following week brought the full Q2 earnings report, a cut to full-year guidance, and reports of a securities fraud investigation that, while attention-grabbing in headline form, centered on the narrower question of whether IBM executives had accurately characterized the state of their sales pipeline in the weeks before the preliminary warning, a disclosure timing dispute rather than an allegation of financial fraud in the traditional sense.2 Financial media coverage was wall-to-wall.

Then, on July 23, the morning after the full results landed, IBM announced one of the most strategically significant moves in its quantum computing program to date:3

A definitive agreement to acquire HRL Laboratories, LLC.

We suspect many investors missed it entirely.

What Is HRL Laboratories?

HRL is not a startup, and it is not a speculative bet on a technology that may never materialize. It is one of the United States' most storied industrial research institutions. Founded in 1948 as Hughes Research Laboratories, HRL has operated for decades as a joint venture between Boeing and General Motors. Its history of landmark scientific contributions includes the demonstration of the first working laser in 1960.4

Today, HRL operates a research campus near Malibu, California, where a team of physicists and engineers has spent years pursuing one of the most promising and technically demanding paths in quantum computing, specifically **silicon-based spin qubits**.

Both Boeing and GM will continue to partner with IBM on quantum applications and advanced technology development after the transaction closes, which is expected by the end of the third quarter of 2026.

Silicon Spin Qubits: A Different Path to the Same Destination

To understand why this acquisition matters, it helps to understand what distinguishes spin qubits from the superconducting qubits IBM has built its quantum program around.

IBM's existing quantum processors, including its current Nighthawk generation, a 120-qubit system unveiled in November 2025, use superconducting circuits. These are loops of superconducting metal cooled to extreme temperatures, around 15 millikelvin, that behave quantum mechanically when microwave signals are applied. This is the approach also used by Google. It has produced impressive results, and IBM's roadmap around it is concrete:5

- Quantum Starling, targeted for 2029, is projected to be 20,000 times more capable than today's systems and able to execute 100 million quantum operations.
- Blue Jay, targeted for the mid-2030s, is projected to reach 1 billion quantum operations.

Spin qubits take a different approach. Rather than superconducting metal loops, they trap individual electrons in structures called quantum dots, which are nanoscale regions fabricated from layered silicon and germanium. The qubit is encoded in a quantum property of the electron called spin, which has two measurable states often labeled "up" and "down," playing the role of the 0 and 1 in a classical binary system.

HRL's specific implementation uses what is called an exchange-only (EO) qubit architecture, in which three electrons held in three adjacent quantum dots together form one logical qubit. This approach offers a key practical advantage, in that it is controlled entirely through electrical pulses applied to metal gates, using fabrication techniques that are directly compatible with standard CMOS6 semiconductor manufacturing, the same industrial processes used to make conventional computer chips.

The cryogenic advantage is also meaningful. While IBM's superconducting systems must operate near 15 millikelvin, spin qubits can function near 1 Kelvin, still cold by everyday standards, but orders of magnitude less demanding in engineering terms. Simpler cooling requirements make the control electronics and thermal infrastructure needed to scale up a quantum processor substantially more tractable.

As silicon-based quantum devices can theoretically be shrunk to smaller sizes than superconducting circuits, HRL's approach could offer a longer-term path to the very high qubit counts that fault-tolerant quantum computing will ultimately require.

HRL's Scientific Track Record Is Real

Skepticism about quantum computing claims is healthy. The field has suffered from overclaiming, and investors have been burned by roadmaps that extended indefinitely into the future. In our view, HRL is a different case. Its progress in silicon spin qubits is documented in peer-reviewed publications with specific, reproducible results.

In March 2023, HRL published a landmark paper in *Nature* demonstrating the first universal control of encoded spin qubits.7 Universal control is a precise technical threshold, and it means the qubit system can execute the complete set of logic operations required for a fully programmable quantum computer, rather than only specialized or partial gate sets. The HRL team, 23 researchers in total, demonstrated this using silicon-germanium quantum dot arrays, showing that their exchange interaction approach could implement single-qubit gates, controlled-NOT (CNOT), controlled-Z (CZ), and SWAP operations.

The more recent result is arguably more significant in the context of IBM's acquisition. In April 2026, HRL published a preprint describing a 56-quantum-dot processor containing 18 qubits, along with a successful demonstration of basic error-detecting codes.8 IBM Research confirmed this achievement directly, noting quantum dots allowed HRL to demonstrate a digitally controlled silicon quantum processing unit comprising 56 quantum dots as 18 qubits, which IBM described as "a groundbreaking feat in scalable quantum computing.”9

To be clear-eyed about where this sits relative to IBM's superconducting systems. IBM's current processors operate at 120-plus physical qubits. HRL's 18-qubit silicon processor is research-scale hardware. The gap is real. HRL's own Thaddeus Ladd, a group leader and co-author of the 2023 *Nature* paper, described the remaining challenges with measured honesty in an accompanying press release, saying "It is hard to define what the best qubit technology is, but I think the silicon exchange-only qubit is at least the best-balanced. Real challenges remain in improving error, scale, speed, uniformity, crosstalk, and other aspects, but none of these requires a miracle.”10

That last phrase, "none of these requires a miracle," is a meaningful statement in a field where miraculous claims are common. It signals that HRL's challenges are engineering problems, not physics problems.

The Anderon Connection: Why the Timing Is Deliberate

The HRL acquisition does not stand alone. It is the second piece of a manufacturing strategy IBM has been assembling in 2026.

In May, IBM announced the establishment of Anderon, described as the world's first pure-play quantum wafer foundry. Anderon is being created as a standalone IBM company, with support from the U.S. Department of Commerce, to enable scalable and agile manufacturing across multiple quantum computing modalities. The foundry is built on a 300-millimeter semiconductor line that can iterate device designs approximately 30 times faster than smaller-format alternatives.

The operative phrase in that description is "multiple quantum computing modalities." When Anderon was announced, it raised a natural question, specifically, which modalities, beyond IBM's existing superconducting qubit platform, was IBM intending to manufacture at scale?

HRL answers that question. IBM explicitly stated that the acquisition offers the opportunity to develop spin qubit manufacturing within Anderon, enabling faster learning cycles and greater consistency. Silicon spin qubits, fabricated using CMOS-compatible processes, are precisely the kind of technology that a semiconductor-scale foundry is positioned to industrialize.

Together, Anderon and HRL represent something more coherent than two separate announcements. They represent a vertically integrated quantum manufacturing strategy, one that covers both the near-term superconducting roadmap toward Starling and Blue Jay, and the longer-term question of how quantum processors might eventually be built at the scale of millions of physical qubits.

Beyond Computation: Sensing and Networking

IBM's quantum program has historically centered on computation, and that is where most investor attention has focused. We think that HRL expands the scope considerably.

HRL brings research capabilities in quantum sensing, notably ultra-precise measurement devices that exploit quantum effects to detect physical phenomena at sensitivities impossible for classical sensors. Applications in this area span healthcare diagnostics, navigation systems independent of GPS, and defense, where quantum sensors are increasingly viewed as a strategic technology. IBM expects HRL's work to contribute to the industrialization of quantum sensing as a commercial capability.

HRL also contributes to quantum networking, which involves transmitting quantum information between physically separate processors. This capability will be essential for distributed quantum computing architectures, systems where multiple quantum processors work in concert rather than as isolated units.

The continued involvement of Boeing and General Motors as partners after the acquisition is worth noting. Both companies have specific interests in quantum sensing, Boeing in aerospace navigation and structural monitoring, GM in materials science and battery research, and their ongoing collaboration adds an applied dimension to what might otherwise appear to be purely foundational research.

Conclusion: What This Means for Investors Focused on Quantum Computing

IBM's acquisition of HRL is not a near-term earnings catalyst, and it is not intended to be. The transaction price was not disclosed, and its financial contribution to IBM's results in the coming quarters will be negligible relative to IBM's scale.

What it represents, in our view, is a deliberate decision by one of the world's most experienced quantum computing organizations to pursue multiple qubit modalities simultaneously rather than concentrating entirely on its existing superconducting platform. This is precisely the kind of technical optionality that distinguishes companies with serious long-duration quantum ambitions from those making shorter-term bets.

For investors assessing the quantum computing landscape, IBM's move reinforces a thesis worth examining closely. The companies most likely to define fault-tolerant quantum computing in the 2030s and beyond

are not necessarily those with the most qubits today, but those building the research depth, manufacturing infrastructure, and multi-modal expertise to navigate the long arc of hardware development.

The WisdomTree Quantum Computing Fund (WQTM) had a 3.33% exposure to IBM as of July 24, 2026.11 We were especially interested to see a clear signal of diversifying their qubit modality exposure beyond superconducting into silicon spin, and we also see the emphasis on building a supply chain for quantum processors. IBM tends toward a high degree of transparency with their research efforts and timelines, so we look forward to tracking these developments.

1 Source: CNBC. (2026, July 14). *IBM stock craters 25%, the worst day on record, after company issues second-quarter earnings warning.*

2 Sources: Levi & Korsinsky. (2026, July 21). *International Business Machines Corporation (IBM) securities investigation notice.* PR Newswire; BigGo Finance. (2026, July 22). *IBM slashes 2026 revenue outlook as mainframe sales plunge 42%, Q2 misses Wall Street.*

3 Source: IBM Newsroom. (2026, July 23). *IBM to acquire HRL Laboratories to power the future of quantum.* IBM.

4 Source: NAND Research. (2026, July 23). *IBM acquires HRL Laboratories, adds silicon-spin qubits to its quantum portfolio.*

5 Source: Quantum Computing Report. (2025, November 13). *IBM advances quantum roadmap with Nighthawk processor and 300mm wafer fabrication shift.*

6 Refers to Complementary Metal-Oxide-Semiconductor, which is often used as a shorthand for current semiconductor fabrication techniques.

7 Source: Weinstein, A. J., Reed, M. D., Jones, A. M., Andrews, R. W., Barnes, D., Blumoff, J. Z., Euliss, L. E., Eng, K., Fong, B. H., Ha, S. D., Hulbert, D. R., Jackson, C. A. C., Jura, M., Keating, T. E., Kerckhoff, J., Kiselev, A. A., Matten, J., Sabbir, G., Smith, A., Wright, J., Rakher, M. T., Ladd, T. D., & Borselli, M. G. (2023). Universal logic with encoded spin qubits in silicon. *Nature*, *615*(7954), 817–822.

8 Source: Members of the HRL Quantum Team. (2026, April 17). *A digitally controlled silicon quantum processing unit* [Preprint]. arXiv.

9 Source: IBM Research. (2026, July 23). *IBM to acquire HRL Laboratories to power the future of quantum* [Blog post]. IBM.

10 Source: HRL Laboratories. (2023, March 6). *HRL Laboratories silicon encoded spin qubits achieve universality* [Press release]. EurekAlert.

11 Source: WQTM fund page, data as of July 24, 2026, with **Holdings subject to change.**

Important Risks Related to this Article

There are risks associated with investing, including potential loss of principal. To the extent the Fund invests a significant portion of its assets in the securities of companies of a single country or region, it is more likely to be impacted by events or conditions affecting that country or region. The economic, political, regulatory, and other events and conditions that affect issuers and investments in the United States differ significantly from those associated with other countries and regions. U.S. financial markets have become increasingly globalized becoming more integrated with financial markets around the world and as a result, U.S. financial markets are increasingly vulnerable to the risks that may affect non-U.S. financial markets. The Fund's investments in the U.S. are subject to the risk that they, and the U.S. economy more generally, will be adversely affected by a decrease in imports or exports, changes in trade regulations, inflation, and/or an economic recession in the U.S.

The Fund invests primarily in the securities of quantum computing companies. Companies engaged in the development of quantum computing or machine learning technology may be significantly impacted by rapid technological advancements, product obsolescence, intense competition, consumer demand, and government regulation. Such companies are also heavily dependent upon patent and intellectual property rights. The Fund invests in the securities included in, or representative of, its Index regardless of their investment merit and the Fund does not attempt to outperform its Index. The composition of the Index is governed by an Index Committee and the Index may not perform as intended. Please read the Fund's prospectus for specific details regarding the Fund's risk profile.