SCI-TECH

"Some people want it to happen, some wish it would happen, others make it happen."
MICHAEL JORDAN AMERICAN BASEBALL PLAYER

With new grants, Yale-partnered quantum projects eye expansion

BY ANYA GEIST
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TIM TAI

Grants for two Yale-associated projects — QuantumCT and Erasure Qubits and Dynamic Circuits for Quantum Advantage — awarded this year by the National Science Foundation aim to foster quantum education for young students and connect academic and industrial pursuits.

The National Science Foundation awarded two Yale-affiliated technology projects millions of dollars in grants this summer to strengthen partnerships between university researchers and the commercial industry.

QuantumCT — a public-private partnership between Yale, the University of Connecticut and the state — received a $15 million National Science Foundation Regional Innovation Engines award, and Yale-led research project Erasure Qubits and Dynamic Circuits for Quantum Advantage (ERASE) received a separate $4 million grant to continue its study of quantum error correction. Both grants are intended to bolster development of quantum technologies in New Haven, promote real-world applications of quantum research and encourage workforce development.

"The QuantumCT Engine is one of the largest and most comprehensive economic development and technology commercialization efforts ever undertaken in Connecticut," Michael Crair, Yale's vice provost of research and chair of the project's board of directors, wrote in an email to the News.

In May, QuantumCT announced that it had launched collaborations between researchers at the University of Connecticut and Yale and companies including Microsoft and Pfizer. Those projects use quantum technology to advance communications, defense and healthcare infrastructure.

In addition to expanding the project's collaborations, Crair wrote, the QuantumCT grant will go toward the creation of a deep-tech incubator —intended to support the development of early-stage startups— in New Haven.

He added that though the incubator is in the initial phases of planning and design, it aims to ultimately provide entrepreneurs and companies with co-working spaces, engineering resources and entrepreneurial support.

According to the QuantumCT website, the initiative also aims to connect emerging startups with industry partners and government funding.

"The incubator is important because successful innovation ecosystems require more than research excellence — they require the ability to transform discoveries into companies, jobs, and economic impact," Crair wrote.

The National Science Foundation grant will also help to launch QuantumCT's workforce development program, called QuantumPath, Christine Broadbridge, a professor of physics at Southern Connecticut State University, wrote in an email to the News.

The program will include quantum education for grade-school students, quantum apprenticeships for young adults and opportunities for undergraduate and high school students to take part in research involving a real-world industry use case.

"I really believe [in] making sure that nobody is left behind. Making sure that, especially with emerging technologies that we provide educational experiences, workforce opportunities, for everyone," Broadbridge said.

Steven Girvin, Sterling Professor of physics and professor of applied physics, noted that QuantumCT has also created opportunities for academic researchers at universities in Connecticut to interact with industry professionals, including collaborations with aerospace and pharmaceutical companies in Connecticut.

Girvin also serves as a principal investigator for ERASE, the Yale research project that received $4 million in June through the National Science Foundation's National Quantum Virtual Laboratory program. Launched in 2023, the program "aims to develop and utilize use-inspired and application-oriented quantum technologies," according to its website.

ERASE hopes to deliver a working quantum computer by improving quantum error correction with novel dual-rail hardware, in which quantum information is stored in a pair of boxes sharing a single photon, Girvin said. He explained that this method makes it easier to identify and correct the loss of a photon, which is a common error.

Like QuantumCT, ERASE fosters collaboration between academia and industry. The team completed conceptual design in December 2025, and is now beginning its two-year preliminary design phase. The project is set to partner with the company D-Wave, which recently acquired the Yale-professor-created Quantum Circuits in New Haven and will build the hardware for the quantum computer.

Researchers, collaborators and industry professionals across the country will have access to the computer once it is complete. For Girvin and Broadbridge, this open-source development is exciting.

Girvin stressed that "all these amazing technologies in the 21st century basically come from academia, and it's very important that we continue to fund fundamental curiosity-driven research."

According to its website, QuantumCT was granted a $1 million award by the National Science Foundation in May 2023.

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Students to bring startup incubator from San Francisco to Yale

BY MELISSA ADAMANTIDI
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After a summer in San Francisco where Yale undergraduates lived and built companies together, raising millions, the Yale Entrepreneurial Society is bringing the model to New Haven this fall.

The Yale Hacker House, a live-in startup residency in the city's Nob Hill neighborhood, ran for 10 weeks from May through August and housed 10 teams working across robotics, AI, defense, biotech and financial technology. After a successful summer, student founders said they hope to inject a stronger startup culture into a campus that they feel is not conducive to entrepreneurial ambitions.

"Now we are taking the same successful model from the Hacker House and bringing it to campus centered around a New Haven House," Ariyan Patel '29, co-president of the Yale Entrepreneurial Society, wrote in an email to the News. "We are once again working with Yale alumni as well as partner VCs and law firms, and we would be interested in having Yale on board this time around."

The 15 founders collectively raised $17 million in early-stage funding over the summer, according to Patel, and the house was featured in a July Wall Street Journal feature on students choosing startups over corporate internships.

In New Haven, the Hacker House will be backed by Yale alumni, partner venture capital firms and law firms, Yale Entrepreneurial Society leaders said. Nicolas Gertler '27 co-founded the Hacker House with Lucas Santos '27 and former presidents Leïa Ryan '28 and Oliver Hime '28.

The organization's leaders described the effort as a response to what they see as a gap between Yale's traditional recruiting pipelines and students who want to build companies. Patel said the founders pitched their idea of creating the Hacker House to Yale's Tsai Center for Innovative Thinking in February but were turned down.

In response, the organizers found funding from outside partners.

"Truthfully, Yale, as an institution, is not traditionally strong at cultivating entrepreneurship," Patel wrote in an email to the News. "It's not just about the resources or the centers for innovation. Building and founding a company is a culture. It means foregoing conventional structures. It means taking risks and failing — a lot. Rather than being unmotivated, we doubled down on our vision and raised from partner VCs and firms. We knew we needed a home, and we built one ourselves."

Gertler, a cognitive science major, co-founded the AI legal startup Density Partners this summer. But the process did not come without challenges, he wrote in an email to the News.

"This summer was a success, there is no doubt about it," Gertler wrote. "But what the WSJ article leaves out are the long days, the wrong turns, the things that did not pan out, and the conversations we're still thinking about. In those times, we leaned on each other — for co-founder disputes, raises, or personal issues. We realized that if Yale wasn't going to provide this community, it was our job to build it."

Sofia Teifeld '29, co-president of the organization, said the advancement of AI technology helps facilitate startup culture, even at a traditionally humanities-oriented school like Yale.

"Entrepreneurship at Yale has been around for so long, yet it hasn't been normalized the way it has at other schools," Teifeld wrote. "The age of AI has lowered the barriers to entry for launching startups, making a liberal arts education, where the quality of ideas matters most, absolutely essential."

Zain Anwar '29, a member of the Yale Entrepreneurial Society who visited the Hacker House over the summer, called the collaborative energy in the house "the most inspiring thing I saw all summer" and said he's excited to see that culture in New Haven.

Getler wrote that his group wants to be the first point of contact for Yalies considering a startup.

"And if and when they're ready, they reach out to us," he wrote. "Our hope is that the YES community will be their first call, ready to support."

The Yale Entrepreneurial Society was founded in 1999.

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The Yale Entrepreneurial Society — which ran a 10-week residency in San Francisco this summer where founders raised a total of $17 million — plans to bring the model to campus and build a stronger startup culture.