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Nano Wunderkinds

The youthful partners at Lux Capital, wise beyond their years, are aiming to seed the next industrial revolution.

by Scott Eden

When Peter Hebert, Josh Wolfe and Robert Paull set up their own venture-capital firm in New York City in 2000 — at the peak of the dot-com/telecom craze — they were about a year out of college, they had zero experience in venture-capital funding and they were, for all intents and purposes, working without a financial safety net.

In order to dedicate their full energy to the project, which was condemned by many of their friends and relatives as a gamble, they had quit their jobs. Hebert, a communications major at Syracuse, had worked at Lehman Brothers in equity research, while Wolfe, a Cornell alumnus with a degree in economics and finance, had been an analyst in investment banking at Salomon Smith Barney. Only Paull, who studied architecture at the University of Virginia, had any experience with technology startups, having launched an information-security business.

The new partners worked out of their apartments and quickly racked up more than $50,000 in credit-card debt. Despite the odds, they were a confident bunch. Or, as Wolfe remembers it, "We had a healthy bit of entrepreneurial naiveté — not knowing any better than to charge full speed ahead."

Charge they did — today, the trio and their firm, Lux Capital, are making a big splash in nanotechnology, having just raised a $100 million fund, their second. Meanwhile, Lux has added two new partners: Larry Bock, a veteran entrepreneur, and Adam Kalish, a hedge-fund executive. This past June, Lux spearheaded, along with a syndicate of VC firms, the acquisition of memory-chip maker Everspin from Freescale Semiconductor for $20 million. While the Lux team is prepared to tough out the current economic downturn, it's not as if they haven't navigated difficult markets before.

Back in 2000, venture capital was, of course, highly enamored of Internet and networking startups, even as that bubble began to pop. Lux's partners understood that as unknown 23-year-olds based in New York, they had no hope of going up against the titans of Sand Hill Road. They decided, therefore, to target the so-called physical sciences. "We saw an opportunity to create a niche in an area that a lot of people were underweighting, but where, nonetheless, some really serious technical progress was being made," Hebert, 31, says. He and his partners scoured the campuses of research universities — Cornell, Harvard, MIT, Caltech, Berkeley, Stanford, Texas. They walked halls and knocked on doors in the chemistry, physics and biology departments, attempting to find and befriend scientists doing breakthrough work in emerging technologies, mostly in nanotech and alternative energy. They were (and remain) intellectual talent scouts. It was, they found, an open field. "We were the only representatives of the investment community interested in what these scientists were doing," Hebert says. "We ended up cultivating some strong relationships in an area that has now become extremely competitive and hot."

One of their most important relationships has been with a large private-equity investor (they won't say who). This unnamed PE player bankrolled Lux's first fund and helped guide his new protégés in their strategy. Though the partners won't say how much his stake amounted to, Lux used the capital to make investments in six startups, putting as much as $2 million into each. They were deliberate. It took them almost three years to strike their first deal, in 2003, when they invested $1 million in Nanosys, which had discovered a way to use molecules as logic switches to produce, among other things, the next generation of Flash memory.

Lux was brought into the second round of the Nanosys financing by the company's founder, Larry Bock, a serial tech entrepreneur responsible for more than a dozen publicly traded companies (including Pharmacopeia Inc. and Caliper Technologies). Nanosys has since raised about $100 million in venture financing from a slew of firms, and is generating revenue in the ballpark of $15 million a year, according to Hebert.

Despite the trio's inexperience, Lux's partners convinced Bock to let them join a top-tier group of co-investors (including Venrock and Polaris Venture Partners) based on the groundwork they had laid since founding Lux. For one thing, they had reached out to government agencies and public-policy gatekeepers so that they could help startups obtain non-dilutive grant money for their businesses. "They're very well-connected in Washington," says Harvard biologist David Sinclair, the cofounder of one Lux portfolio company and now a venture partner with the firm.

Lux also strived to develop contacts at established technology concerns (one of Lux's venture partners, for instance, is a former Motorola R&D director). It was able to do this partly through its vigorous emerging-technology research program, which Hebert personally spearheaded. The program grew so rapidly and produced such credible primary research on new technologies from a VC perspective, Hebert says, that the partners decided to separate it from the management company, seed it with capital and let it fly as its own business. Hebert served as CEO of that new entity, Lux Research, until January 2008, when the partners hired a former IDC executive to replace him at the company's helm.

Inevitably, the youth of Hebert and his partners raised eyebrows. Says Victor Sprenger, CEO of a Lux portfolio company called Accelergy, which is using a new process to convert coal into liquid fuel, "I could be their father, easily." Sprenger is 62. "When I first saw them, I did a double-take. Their office looked like a junior high school. But I've gotten way past their youthfulness. They're extremely talented."

Bock, who at 48 is the firm's elder statesman, was impressed enough by the Lux group that he joined the firm as its lone Silicon Valley–based partner in 2005. The move paid immediate dividends when the partners went out to raise Lux Ventures II. Bock's track record added heft to the firm's pitch. About 30 investors contributed to the $100 million total (Lux closed the raise in January 2007). So far, the firm has deployed some two-thirds of that capital, investing in 11 startups.

One of the most promising is Genocea Biosciences, which Lux seeded with around $100,000 in 2006 (the firm has since invested $3.5 million). The company was cofounded by Harvard biologist Darren Higgins, who had made some key discoveries having to do with vaccine production, and Sinclair, with whom Bock had already founded a successful biotech company. (They sold it for $750 million in 2008.) Higgins's discovery appeared to be breathtakingly special. Says Hebert, "The technology allows you to speed up and more accurately identify antigens for vaccines" that could eventually treat currently untreatable diseases. Robert Paull now serves as CEO of Genocea as Lux strives to bring the company's work to market. The firm has also tapped its wide array of contacts in the scientific community — which Hebert sometimes calls the Molecular Mafia — surrounding Higgins with a team of world-class vaccine experts. “They’ve planted themselves right in the middle of the Boston biotech scene,” Sinclair says, “and they’ve gotten to know all the right people.”

As much as Lux makes its living in the realm of big ideas and paradigm shifts, it also deals with individual personalities — the entrepreneurs and scientists who have dedicated their lives to some esoteric study that now has the potential to go commercial. When Lux approaches these people about investing in their ideas, it’s a tricky moment, Wolfe says. “We’re telling somebody who has worked for maybe 10 years on this baby of theirs, ‘Trust me, put your idea in my hands, and I’m going to carry it forward into the world.’ That’s a risky proposition for the scientist.” But Lux, at least, has an edge in that regard; the partners, after all, know a thing or two about taking a leap into the unknown.