

tor ripped through noncredit markets. Quantitative long-short equity hedge funds, which use computer models to identify mispriced securities, were hit especially hard. Two funds at Goldman Sachs — Global Alpha and Global Equity Opportunities — were each down more than 25 percent during the first two weeks of August.

"It is inevitable that hard-to-predict, very disruptive events will happen, and even the best-run low-volatility or market-neutral funds may have become overconcentrated in some of their better-returning ideas, or assumed markets would continue to behave in a linear way," Cooper explains

of his old firm's troubles. "When this happens, prices and performance can explosively readjust. For this reason investors need to diversify, and no one hedge fund, or even fund of funds, provides ideal diversification."

The investment approach followed by Cooper and partner Katherine Priestley at Lincoln Vale owes much to techniques Cooper developed in the 1990s at Goldman Sachs. His strategy in building funds of private equity funds at Goldman consisted of three main components: a unique asset allocation model, a new approach to manager sourcing and selection and the elimination of most traditional restric-

## Phil Cooper's Quantitatively Better Half

If any Goldman, Sachs & Co. partners raised their eyebrows in 1996 on hearing that Philip Cooper, the man just hired to build their new alternative-investment platform, was bringing in his wife for quantitative muscle, their fears were probably assuaged when they saw the list of initials that followed her name: Ph.D., MBA, CFA.

More than a few Goldman partners were already familiar with Lisette Cooper through her work as a consultant to the firm and through Athena Capital Advisors, the investment management company she founded in 1993. Athena specializes in managing wealth for partners of private equity, hedge fund and real estate firms and for other individuals and families with more than \$100 million in assets.

"Our clients are sophisticated investors in their own right, often with complex balance sheets," says Lisette Cooper, 46. "But they need help with planning, portfolio management and risk management, with special attention to taxes." To meet those needs, Athena's 30 professionals create customized portfolios using what Cooper calls "best-of-breed products and cutting-edge technology."

That experience proved invaluable to both Coopers when Lisette joined Phil as a consultant to build the business model and investment guidelines for Goldman's new private equity platform. "It was critical to rough out what an appropriate portfolio structure might be and what diversification meant in private equity," she explains.

Lisette Cooper comes from a long line of quants. Her grandparents on her mother's side were both chemistry professors. Her father is a math professor, and her mother has two master's degrees — one in computer science and one in math. As an undergraduate at Wesleyan University, Cooper majored in earth and environmental sciences; she went on to earn a Ph.D. in geology from Harvard University in 1986. Only after com-

pleting her dissertation, "The Nd and Sr Isotopic Evolution of the Oceans of the Past 900 Million Years," did she begin to doubt her choice of profession. "I realized I would never be able to tolerate spending the rest of my life in an ultraclean



chemistry laboratory, going through an airlock to be separated from all people," she says.

Her Ph.D. complete, Cooper began taking classes at Harvard Business School. In a case study on stock options, she was introduced to the Black-Scholes option pricing model. Her reaction was probably not that of the typical business student: "I thought, 'Aha! — the heat flow equation with very simple boundary conditions,'" she says.

Her insight proved correct. The options pricing model that won a Nobel Prize for economists Fischer Black and Myron Scholes was based in part on the heat transfer equation of Brownian

motion first derived by Albert Einstein. Recognizing the equation from her studies in the earth sciences, Cooper began investigating options pricing and other areas of quantitative finance. In time she also started attending panels and cocktail parties hosted by Wall Street firms for Harvard Business School students.

She might well have become an investment banker, if it weren't for the advice of a "tall skinny guy" she remembers approaching at a Goldman Sachs cocktail party for potential recruits in 1987. "You see all of these people here?" said the man — who happened to be then-Goldman partner Robert Rubin. "They all want to be investment bankers. You don't want to do that. You want to go into trading or fixed-income research or capital markets, working with derivatives products."

Rubin's words struck a chord. After getting her MBA, Cooper followed the advice of the man who would become co-chairman of Goldman and later U.S. secretary of the Treasury. She took a job as a senior strategist with Merrill Lynch Capital in San Francisco, working with institutional clients, such as Bank of America, California Public Employees' Retirement System and the Public Employees' Retirement Association of Colorado, to help design their investment portfolios. After a brief stint at MSCI Barra, which specializes in financial modeling for institutional investors, she set out on her own by launching Athena.

Lisette runs Athena from an office in her Lincoln, Massachusetts, house while her husband, whom she met while at Barra, works down the hall on his new venture, Lincoln Vale. Also in the house are their five children — Lisette has a child from a previous marriage, Phil has three, and they have one son together. The Coopers welcomed a new arrival this year: They applied in 2000 for a patent titled "Deriving a Probability Distribution of a Value of an Asset at a Future Time." U.S. Patent 7236953 was granted in June. — U.G.