Marie Filbin

From the violent streets of Belfast to a small municipal college in Manhattan, Marie Filbin has traveled an unconventional path to success. And she's walked that distance in well-shod feet.

Ashley Fisher vividly recalls the first time she met Marie Filbin seven years ago. A diving accident had left the 23-year-old dancer and model paralyzed from the neck down. When she heard about Filbin's work on reversing spinal cord injuries, she scheduled a meeting with Filbin, who heads a neurobiology lab at Hunter College in New York.

The accident had left Fisher a bit introverted—but something unexpected broke through her reserve. "I was sitting in Marie's office and I happened to look down at her feet and noticed that we were wearing the same Prada shoes," Fisher says. "I saw then that there was another side to this very serious, very intelligent scientist and I began to let my guard down."

Fisher, who has since helped found a group for women with spinal cord injury, has become close friends with Filbin based on their shared interests in travel, food and the arts. But ultimately, "[Filbin] really loves being a scientist," Fisher says. "She really believes in making someone's life better."

Filbin—whose first name rhymes with 'starry'—is noted for describing the chemical environment of an injured nervous system and the factors that influence the regrowth of axons from the injury site. Her colleagues speak of her highly, marveling at her ability to fashion a successful career at an unglamorous municipal college in Manhattan.

Filbin made her first big discovery studying the molecules within myelin, the insulating sheath that protects the nerves' axons and enhances their signaling abilities. She found that when nerves are exposed to a protein called myelin-associated glycoprotein, their axons do not grow (*Neuron* **13**, 757–767; 1994). The finding was considered radical because the protein had long been understood to promote, not impede, axon regeneration. Filbin showed that the altered chemistry of a damaged myelin membrane is responsible for reversing the protein's effect.

Her conclusions met with strong skepticism. A rebuttal published by Martin Schwab at the Brain Research Institute in Zurich, Filbin recalls, "almost ruined my career."

"It was Pasteur who said that chance favors the prepared mind, and she truly exemplifies that," says Marc Tessier-Lavigne, senior vice president of drug discovery at Genentech (*Nat. Med.* **10**, 10; 2004). "Others who'd probably seen that effect wouldn't have recognized it and run with it," he says.

Two other glycoproteins were later discovered to also inhibit axon regrowth, and Filbin showed that all three act through a single pathway. She made another breakthrough when she found that elevating the concentration of a molecule called cyclic AMP allows the axons to begin growing despite the inhibitors (*Neuron* **22**, 89–101; 1999). As her lab has pursued this line of research, Filbin's work has taken more of a translational—and collaborative—bent. Among her collaborators is Jerry Silver, professor of neurology at Case Western Reserve University in Cleveland, Ohio.

For years, Silver had discounted Filbin's work, insisting that the biggest barrier to axonal regrowth is the scar that forms on cells after injury. But Filbin defended her conclusions like a bulldog, observers say, and the two had several contentious public debates. "She does have a pretty hot temper. I'm happier being around her when we think we like each other," says Silver.

Silver concedes that Filbin's results have become impossible to ignore, and the two are together pursuing a therapy that draws on both approaches. At last year's Society for Neuroscience meeting, Filbin and Silver were asked to participate in a debate. "By the end, they were basically just praising each other's work," says Eleana Nikulina, one of Filbin's postdoctoral fellows.

Filbin's students describe her as exacting yet flexible, a mentor who encourages them to lean on each other. Lab members frequently help care for Filbin's four-year-old West Highland terrier, Angus McDuff, who is in theory barred from the building but enjoys the run of the lab.

Several years ago, the lab endured a tragedy when a graduate student from Japan lost a lengthy battle with ovarian cancer. Filbin is said to have cared for her as if she were a daughter, battling the student's unsympathetic landlord and leaving a conference in Denver to be by her side. The school posthumously awarded the PhD after another student, Tim Spencer, wrote and presented her thesis. Filbin delivered the student's cremated remains to her family *en route* to a conference in Tokyo.

"I think so many of us get caught up in the exigencies of getting the next grant or getting people organized that when these types of tragedies occur, we don't have the perspective to really know how to respond," says Rajiv Ratan, director of Burke/Cornell Medical Research Institute in White Plains, New York. "She does, and it doesn't slow her down at all."

Filbin had her own bouts with breast cancer in 1995 and 2000, and although she doesn't avoid discussing the subject, says it's something she rarely thinks about. Nor does she regard herself as a 'survivor.' "That makes it sound like you're going through a war, it's nothing like that at all," she says.

"I've already succeeded beyond my wildest dreams. I don't think I could do any better than what I've already done."

Perhaps that's because she has some notion of what a war looks like. Growing up outside Belfast, she was witness to the violent political conflict between Northern Ireland's Catholics and Protestants and the tension it created in her own middle-class Catholic family. She enjoyed opportunities denied many Catholic children, such as ballet and riding lessons, but says she was painfully aware that her peers were Protestant. She also recalls walking into a gun battle on the way home from a friend's and, on another occasion, watching a bomb explode in the street.

Determined to escape, Filbin in 1974 went to the University of Bath, where she later earned a PhD in pharmacology. Following postdoc positions at the University of Maryland and Johns Hopkins University, in 1990 she began seeking a laboratory of her own. She had never heard of Hunter College but agreed to an interview there so she could enjoy a weekend in New York City. To her surprise, the faculty and students impressed her.

"In a way, that's one of the most remarkable things," says Nobel Laureate Paul Greengard, who works at the prestigious Rockefeller University nearby. "I once talked with her about this and she said that she thinks that's a wonderful place to work."

Filbin recounts the advantages: the flexibility she is afforded, the lack of competition and infighting, her love of New York. The lone obstacle, the ability to attract the highest-quality postdocs, waned as her reputation rose.

"People tend to think that if I could do what I've done here, then just imagine what I might have accomplished at another university," she says. "But I don't think that's the case at all. I've already succeeded beyond my wildest dreams. I don't think I could do any better than what I've already done."

Bruce Diamond, New York