

Michelangelo Signorile '82

Alternative Voice

You might think a writer who specializes in one topic would feel limited, but that hasn't happened to Michelangelo Signorile. He writes almost exclusively about the gay community, and has yet to run out of issues or enthusiasm. "The great thing about writing about the gay community is that it's so diverse," Signorile says. "It really gives me a broad perspective. I never get tired of writing about it."

Though Signorile is gay, he didn't plan to spend his career reporting on gay life. "I expected to work at a mainstream news organization or public relations firm," says the Newhouse graduate. He worked in public relations for a short time after college, but the explosion of AIDS among the gay population led him to change course. "With the AIDS crisis, I began to focus on gay politics," he says. "It politicized a lot of people."

Signorile became a powerful voice for the gay community. He has written three books, including *Queer in America: Sex, the Media, and the Closets of Power*, and has done stints as a columnist and editor at the *Advocate*, *OUT Magazine*, and, currently, the web site *Gay.com*. His most well-known work involved the controversial practice of "outing," reporting on the homosexuality of closeted public figures. It's a practice for which Signorile has been both praised and vilified, but he's "proud of being at the forefront of something that has changed journalism," he says.

Signorile emphasizes that he has never advocated the indiscriminate outing of gays and lesbians, especially those who are not public figures. But he favors reporting truthfully on a person's sexuality when it's relevant, or when the person can affect policy toward the gay community. He stresses that he, or any other reporter, would use the same guidelines in deciding whether to include personal details about a straight subject for a story.

At the moment, Signorile is taking a temporary detour from his usual beat to write a book about Staten Island, where he grew up. "I have a lot of interests and I want to explore them all," he says. "But I will always consider reporting on the gay community my first calling."
—Cynthia Moritz

Feline Forensics

Scientist Marilyn Menotti-Raymond is unraveling the cat genome—an effort that could advance the understanding of our own genetic makeup

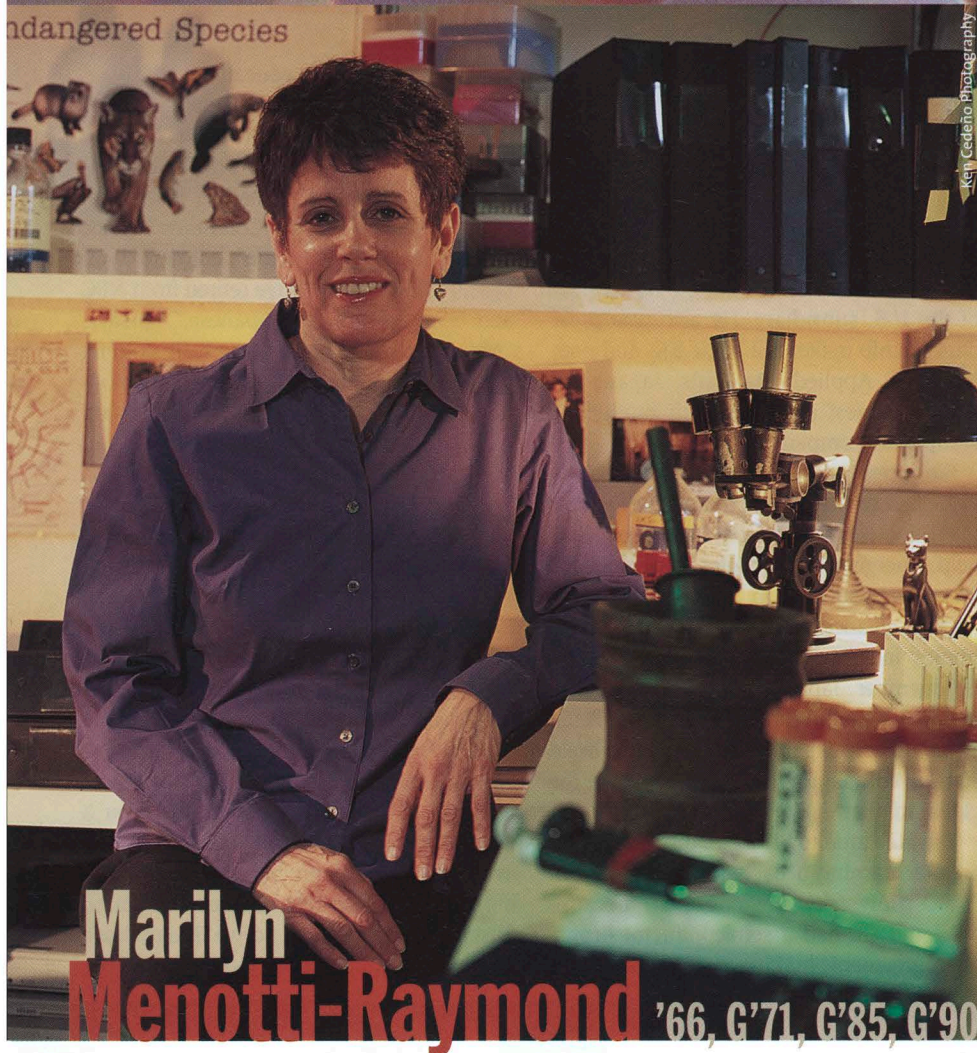
By Judy Holmes

The elusive cat—both revered and demonized throughout the course of human history—has become one of the animals most important to helping scientists understand human genetics. Marilyn Menotti-Raymond is among a group of scientists studying and developing a map of the cat genome at the National Cancer Institute's internationally renowned Laboratory of Genomic Diversity (LGD) in Frederick, Maryland. Part of the National Institutes of Health, it is the only research laboratory in the world attempting this work. "We are a cat genome center," Menotti-Raymond says. "We have 15 researchers working on many aspects of the cat genome, from constructing genetic maps of the cat to research in natural populations of exotic felids."

It turns out that cats and humans have much in common in terms of how their genes are ordered and organized, Menotti-Raymond says. Cats have 19 pairs of chromosomes, including one pair of sex chromosomes; humans have 23 pairs of chromosomes, including one pair of sex chromosomes. "If you align human and cat chromosomes, the gene order and organization are more alike than with any other mammalian species whose genomes have been examined, except for some of the primate species," she says. Because of the similarities, scientists believe it will be easier to identify hereditary diseases caused by defects in genes that are analogous to both cats and humans. In doing so, researchers hope to establish the cat as a useful model to further the understanding of some 200 human hereditary diseases; tumorous conditions called neoplasia; genetic factors related to infectious diseases; and mammalian genome evolution.

At LGD, Menotti-Raymond is a staff scientist in the animal genetics group, where she works with five other researchers and several graduate students and postdoctoral fellows. "The work can sometimes be frustrating," she says. "You have to like the process and be satisfied with the pursuit of knowledge."

Menotti-Raymond's career took an unusual turn when a cat became a key part of a murder case on Prince Edward Island, Canada. In 1994, Shirley Duguay, a 32-year-old mother of five, disappeared. Her body was found in a shallow grave a few months later. Among the chief suspects in the murder was the woman's estranged common-law husband, Douglas Beamish, who was living nearby in his parents' home. Royal Canadian Mounted Police had no evidence linking Beamish to the crime.



Marilyn Menotti-Raymond '66, G'71, G'85, G'90

During the search for the victim's body, however, the Mounties discovered a plastic bag containing a leather jacket with blood stains that matched the victim's blood. The jacket also contained 27 strands of white hair, which forensic investigators determined were from a cat. The Mounties remembered a white cat named Snowball living in Beamish's parents' home. The trick was to prove the cat hair found in the jacket was Snowball's.

A Mountie investigator used the Internet to search for an expert in cat genomes, which led him to Menotti-Raymond and LGD director Stephen J. O'Brien. "They wanted to know if we could do a DNA fingerprint of the cat hair," Menotti-Raymond says. "We had the genetic tools to do it, but it became a question of whether we wanted to get involved in forensics, and whether we could isolate enough DNA from a single hair specimen to perform the analysis. We decided to proceed and determined there was a match between

the cat and the hair found in the jacket."

Menotti-Raymond and O'Brien became expert witnesses during the murder trial, and their evidence helped convict Beamish. The case set a legal precedent as the first to allow animal DNA-typing data as evidence in a court proceeding. Afterward, the lab received numerous requests from across the United States for similar DNA typing. But LGD researchers simply did not have the time, resources, or mandate from the NIH to devote to forensic investigations on a large scale. The solution: Develop tools so that other facilities could do this kind of forensic work.

Last year, Menotti-Raymond received a \$265,000 grant from the U.S. Department of Justice to develop the National Feline Genetic Database—the first of its kind. The researchers are using the grant to develop molecular tools that will enable forensic laboratories to do DNA analyses on cat specimens—hair, blood, or tissue samples. "The goal is to develop the molecular tools

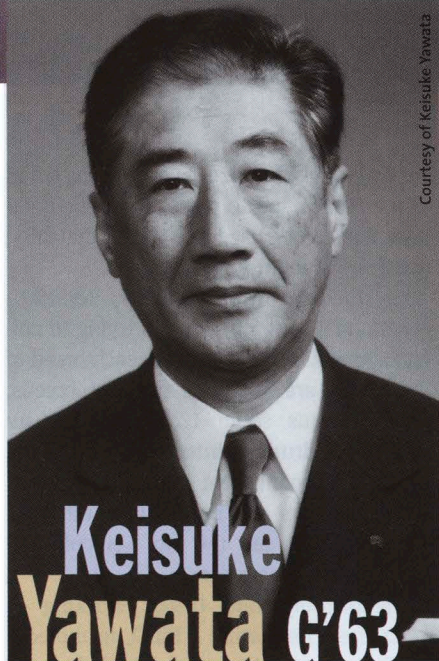
needed to characterize cat specimens left at crime scenes and to create a genetic database that can be used to evaluate matching profiles," Menotti-Raymond says.

To develop the database, Menotti-Raymond's research group is trying to collect about 50 specimens from each breed of cat. There are about 35 different breeds, which means some 1,750 samples are needed. To drum up interest in the project, Menotti-Raymond sent out mass mailings to cat breeders and has visited numerous cat shows. So far, the lab has collected more than 850 samples.

Menotti-Raymond began working at LGD after completing a Ph.D. in molecular biology at SU in 1990. Much like the fabled nine lives of a cat, the Fayetteville, New York, native has undergone a few incarnations of her own. Although she always wanted to study microbiology like her father, Amel Menotti, a chemist and the first director of research at Bristol Laboratories in Syracuse, her life took a detour at Denison University in Ohio. During her sophomore year there, she married and returned to the Syracuse area with her husband.

She earned a bachelor's degree in bacteriology at Syracuse University in 1966, and, after having two sons, James and Daniel, completed a master's degree in science teaching in 1971. When the boys reached high-school age, Menotti-Raymond returned to college to pursue her dream of becoming a biologist. "I felt I had left something undone," she says. "I initially went back to college to complete a master's degree in biology and then decided to continue on in the Ph.D. program."

Menotti-Raymond studied with College of Arts and Sciences biology professor David Sullivan, and, as a doctoral student, researched genetic regulation in *Drosophila* (fruit flies). The work resulted in the publication of three papers that she co-authored with Sullivan, who suggested she interview for a position at LGD after she graduated. Since then, she has authored or co-authored more than 20 articles in her field. "I am fortunate to have spent the early years of my children's lives at home with them," she says. "That was important to me. But I was also lucky that when I decided to return to school, it was only seven miles to a university where I found an excellent mentor and an excellent laboratory."



Courtesy of Keisuke Yawata

**Keisuke
Yawata G'63**

Guardian Angel

After a 40-year career in the semiconductor industry, Keisuke Yawata retired in 1997 to begin his second career as a financial “angel.” In the venture capital business, “angels” invest in start-up companies and share their business experience and contacts to improve start-ups’ chances of success. Yawata has plenty of expertise to offer. During his career, he served as

president and CEO of several major industry operations in Japan and the United States, including NEC Electronics in California, the U.S. subsidiary of NEC Corporation in Japan, one of the world’s largest high-tech companies. Yawata worked for NEC for nearly three decades, and became a vice president after taking over as head of the U.S. subsidiary. He also was president of chip maker LSI Logic KK, and president of Applied Materials Japan, the world’s largest semiconductor production equipment company.

Since retiring from Applied Materials, Yawata has created The Future International (TFI) and Start-up101.com. TFI’s goal is to help emerging technologies and products, primarily from Silicon Valley, succeed by forging alliances with the Japanese electronics industry. Yawata also launched a 200-member Japan chapter of the International AngelInvestors Institute in Silicon Valley, to help Japanese entrepreneurs build start-up companies that can compete in the global market.

Yawata came to SU as a Fulbright Scholar after earning a bachelor’s degree from Osaka University. He chose SU because NEC and GE had a semiconductor licensing agreement, making Syracuse a perfect

place to continue his education.

Yawata says his time at SU prepared him to be a venture capitalist, which is one reason he stays active in the University community as a member of the L.C. Smith College of Engineering and Computer Science advisory board. “If I hadn’t come to Syracuse, I think I would have retired from NEC and been an ordinary Japanese,” he says. “My understanding of American culture, lifestyle, life planning, and career development was gained through my association with students on the SU campus and friends that I made at General Electric in Syracuse. They gave me the vision to get involved in helping the next generation of technology companies.”

When he looks to invest his time and finances in a start-up, Yawata scouts for companies with a global outlook that have an exciting product and a strong management team. He feels the Japanese economy is ready for companies with new ideas. “Many Japanese companies have stalled,” he says. “The reason we haven’t seen a new Sony or Honda since the ’50s is that everyone focused on big companies and didn’t foster start-ups. There is room to find a niche and grow, so we’ll take those opportunities.”

—Jonathan Hay

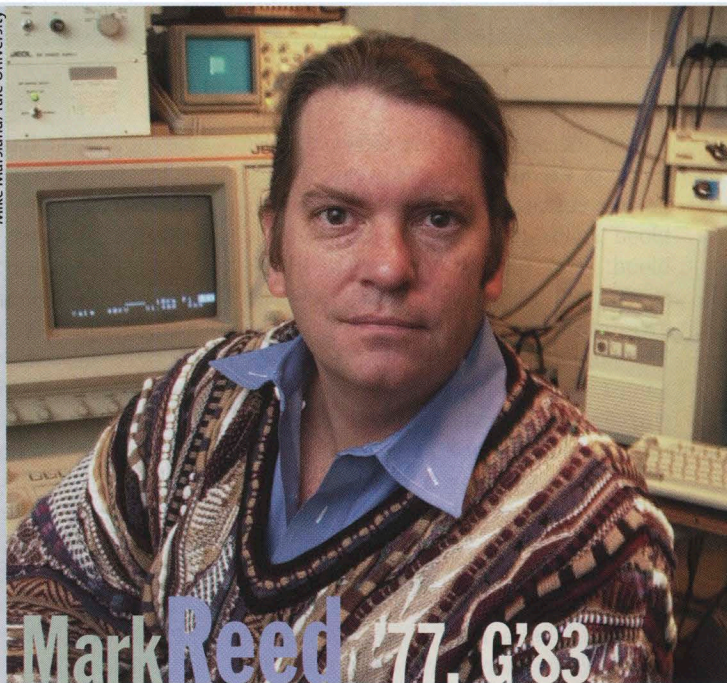
Tipping the Nanoscales

When it comes to computer components, Yale professor Mark Reed thinks small. Real small. Reed works at the forefront of the nanotechnology field, manipulating materials on a molecular scale. “I try to understand the physics of things that are very, very tiny,” he says. “We’re pushing the ultimate limit of how small electronic devices can be made.”

Reed, a professor of electrical engineering and applied physics at Yale since 1990, and his research group are developing molecular-scale electronics. They recently tested a one-molecule on-off switch that could be used in a microscopic computer. Such a machine would use less electricity and be cheaper to make than conventional computers, but would be much more powerful. “There are all sorts of applications,” Reed says. “But I’m more interested in the basic science, even though, of course, we always do some of our research in context to its applications. I’m trying to apply all my tools and expertise in the electronics area, from the nanoscale to the biological world.”

Improving those tools by using novel fabrication techniques and fresh ideas is key to working with electronics components smaller than ever before. “I typify my research as bridging fields, because the intersections are where things get interesting,” he says. “I’m often surprised at how easy the solutions are. The reason people didn’t see them is that they were just unaware of what the field next door was doing.”

Mike Marsland/Yale University



Mark Reed '77, G'83

Reed says the only way to explore new territory is to take chances. “Taking chances means delving into fields you’re totally unprepared to delve into,” he says. “You have to keep reinventing yourself, and that’s where I find the science exciting.”

—Gary Pallassino



Toying With Technology

As an engineer in the '80s, Chris Gentile often found himself strolling around hot nuclear reactors in a radiation suit. The work was far from fun and games. Then he received a call from his brothers, who ran a graphics agency in New York—they needed help designing a new high-tech toy product using holograms. Gentile, who had been designing and certifying nuclear power plants for several years, helped them produce high-quality, low-cost polymer holograms for an action figure line called Visionaries before joining a new company they formed. “I got rid of my radiation suit and came back to Manhattan,” he says.

Over the next decade, Gentile was in-

involved in bringing more than 20 different toys to market, including electronic games and virtual reality products. Today he ventures onto the World Wide Web as executive vice president for creative services at Viewpoint Corporation (www.viewpoint.com), and as president of MC Squared Inc. (www.mcsqd.com), a consulting, design, and inventing firm, where he produces award-winning digital videos for such companies as Intel and Computer Associates International. “I’ve always liked problem-solving, which is what engineering tends to be,” says Gentile, who studied mechanical engineering at SU.

The holograms he developed for various

toy lines in the '80s led him to work with 3D graphics. He then turned his eye toward the electronic gaming industry, inventing the Nintendo PowerGlove, the first consumer virtual reality product. “Some people say it was a failure because it only lasted a year and a half, but it sold 1.5 million pieces,” Gentile says. “I wish I had a failure like that every two years. When you sell 1.5 million of a product from which you make royalties, it’s a nice profit.”

Gentile continued working on virtual reality, forming a new company called Millennium RUSH to develop “behavioral-based animation.” “It’s animation that is generated in real-time versus traditional animation that is pre-scripted,” Gentile explains. “If you hit a character in the shoulder, he grabs his shoulder at the spot you hit him.” DisneyQuest’s indoor interactive theme parks use the technology in a six-person virtual reality battle game called Ride the Comix, which Millennium RUSH designed and developed.

Gentile’s company began putting fully functional interactive characters on the World Wide Web in 1998, and tried to generate interest in using them as digital salesmen. “The problem was, we were the epitome of ‘ahead of our time,’” he says. “We were out there trying to show people how this could improve sales for e-commerce, but back in '98 people were saying: ‘What is e-commerce?’”

Internet shopping was the theme of a digital video Gentile produced in 1999 with MC Squared. Using interactive characters, the video showed off the capabilities of Intel’s forthcoming Pentium IV computer, and won two prestigious Communicator Awards in a national competition honoring excellence in visual communications. “It seems I created a niche in corporate technical video productions,” he says. Viewpoint Corporation, a public company he joined in 1999, designs 3D models for the motion picture industry and creates web page content and e-commerce sites for such companies as Nike, Sharper Image, Eddie Bauer, and Sony. The company’s Viewpoint Media Player integrates streaming video, audio, vector graphics, panoramas, high-fidelity 3D content, and animation. “Individually our technology’s components compete very strongly,” Gentile says. “If you look at how we integrate all types of rich-media technologies into one media player, no one can touch us.”

—Gary Pallassino