

# Evolution of a Dance

*Artists, scientists, and ethicists collaborate on a multimedia exploration of genetic science.*

AT CENTER STAGE, MARTHA WITTMAN—A DANCER IN HER 70s—CONTEMPLATES a partially peeled apple that she holds in her hand. Noting the resemblance of the peel to the spiral shape of DNA, she reflects on the many varieties of apples, how different they look and taste, and the many wonderful ways her mother used to prepare them. ¶ A younger dancer bursts onto the stage in a wheelchair. Born with osteogenesis—an inherited disorder that causes bones to break easily—she dances defiantly on wheels, and then on crutches, whirling among Wittman and other more able-bodied members of the Liz Lerman Dance Exchange. The fury of the scene recedes, and Wittman wanders off the stage, admiring her apple and shaking her



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LIZ LERMAN

*Bonnie Bassler (left) and Liz Lerman collaborated to bring genetic science to the fore in an unusual way—on stage.*

head at the thought of genetic manipulations that might render all apples uniformly red and tasteless. “No more tart surprises,” she sighs.

In *Ferocious Beauty: Genome*, choreographer Liz Lerman and HHMI investigator and fellow MacArthur Award recipient Bonnie Bassler have joined hands with artists, scientists, and ethicists across the country to tell the story of the human genome. A visual and auditory tapestry of dance, music, speech, costume, light, and video, the uncommon production premiered in February 2006 at Wesleyan University, in collaboration with HHMI’s undergraduate science education program there.

Three years in the making, the project was sparked in 2003 when Pamela Tatge, director of Wesleyan’s Center for the Arts, saw Lerman’s intergenerational modern dancers perform. Afterward, she heard the choreographer speak of her desire to develop a dance about genetic research and its implications for humanity. So Tatge arranged for Lerman to meet the then-dean of natural sciences and math at Wesleyan, Laura Grabel, who had been a professional dancer herself. Though

Grabel had kept her dance and science separate for 30 years, noting, “There’s not much call for a dancing biologist,” she found Lerman’s idea provocative.

After that meeting, Wesleyan invited the Dance Exchange, based in Takoma Park, Maryland, to establish a residency program at the university, using the Connecticut campus as home base for the genome dance project. Lerman immersed herself in the history of genetics and consulted with biologists at Wesleyan and elsewhere. She also learned from the students. An HHMI science education program at Wesleyan sponsored a student symposium where dancers and undergraduate scientists compared how they approach problems and do their work.

Bassler, a Princeton University researcher who studies how bacteria “talk” to one another, became an adviser to the project, initially spending a day with the performers to explain her research and watch them experiment with ways to express it in movement.

*What if scientists were choreographers? Eight dancers glide and slide in and out of molecule-like formations—first intertwined, then breaking apart. On an enormous video screen behind them, Eric Jakobsson, director of the Center for Bioinformatics and Computational Biology at the National Institute of General Medical Sciences, ponders the question. “You could start by laying dancers out head to foot, end to end, head to foot....”*

Harris Lewin, a professor of immunogenetics at the University of Illinois, replaces Jakobsson, superimposed on the whirling dancers and supersized on the screen. “It’s the genome shuffle,” he suggests. “We’re all very similar. The chromosomes are basically the same. We just reshuffle the pieces of our ancestors’ genomes.”

Bassler marks that day as one of the most fascinating of her life. “What they do is so different from what I do,” she says, “and yet in some ways, it’s so similar. Cells communicate with a chemical language, I communicate with spoken language, and dancers communicate with movement.”

Lerman, whose “nonfiction dances” often have political and ethical themes, also consulted ethicists in creating *Ferocious Beauty: Genome*. The performance’s first act deals with the rigor and wonder of scientific discovery, focusing on Gregor Mendel, the 19th-century monk renowned for his genetic experiments with peas. The shorter second act presents issues raised by genetic science, such as aging, the search for perfection, and our common ancestry.

Thomas Dwyer, silver-haired and gaunt, perches on a folding chair, hemmed in by brick walls that look a lot like microarrays. The soundtrack is a heartbeat. “New laws for old folks” flash across his walls: “Age 70—cease and desist wearing seat belts; Age 75—mandatory skydiving; Age 80—cross traffic on red light; Age 85—mandatory smoking....” Perturbed, depressed, frustrated, and finally angered by what he’s losing and what he’s

lost, he circles his chair and explores the walls as scenes from his life flash across them.

Yet Lerman didn’t want her production to become a soapbox. “It poses some small and large questions, but it doesn’t attempt to answer them,” she insists. “I just want people to leave saying, ‘Oh, I can understand this. Big things are coming, and I can play a part in them.’”

Lerman and her dancers are taking



*Ferocious Beauty: Genome* expresses the power, momentum, shape, and beauty of biology, as well as the sense of simultaneous connection—and separation—inherent in our genetics.

*Ferocious Beauty: Genome* to stages at universities and performance centers across the country. Each audience will see a slightly different show. “Like biology, it will keep evolving,” Lerman promises. “I’m still trying to understand the piece myself.” ■

—JENNIFER BOETH DONOVAN

FOR MORE INFORMATION: For a schedule of performances, visit <http://www.danceexchange.org/>