

I dream of gene

The Museum of Natural History tries to wake up the public in "The Genomic Revolution" By **Keith Mulvihill**

In June 2000, when scientists announced they had succeeded in sequencing the human genome, the Age of Genomics secured its official spot in the history books. Sure, humans have lived through a ton of ages before this one: the Stone Age, the Atomic Age, the Space Age. And those were all cool at the time, but rocks, protons and satellites somehow seem passé nowadays. Genomics, however—which has the potential to let us clone our favorite pets, cure terrible diseases and choose our kid's eye color—is likely to command our attention for a long time to come. What's more, it's the first scientific era specifically about *you*. So to help you get better acquainted with the stuff you (and all organisms) are made of, the American Museum of Natural History is kicking off its newest exhibit, "The Genomic Revolution," on Saturday 26.

Nearly two years ago, the museum collected a team of scientists, writers, artists, designers and ani-

matoms and commenced working on "Revolution," anticipating the completion of the genome-mapping project. Keeping pace with scientific discoveries proved to be a tricky task, however. For example, the exhibition staff, and most of the scientific world, had expected the genome to contain about 100,000 genes. So when researchers discovered that it only contained about 30,000, the exhibition staff had to correct text on several displays.

Now that "Revolution" is ready for visitors, the first things people will see when they enter are light projects of the letters A, G, T and C, which represent the chemicals that make up DNA: adenine, guanine, thymine and cytosine. The exhibition is then divided into eight sections, each spiced with models (including the first double-helix model of DNA, made in 1953 by James Watson and Francis Crick), videos, interactive stations and artworks—one of which, a mirrored installation by John Kalymnios, was commissioned after some of the exhibit developers happened upon his work in a Chelsea gallery.

According to Rob DeSalle, exhibit curator and codirector of the museum's molecular-biology labs, one of the aims of "Revolution" is to shatter people's misconceptions about how they differ from other creatures. In one interactive display, you can project your image onto a screen that's surrounded by pictures of a mouse, a rat and other lesser life forms; press a button and see how much genetic material you share with each of these "low lifes." (You might be surprised at how much you have in common with a worm.) DeSalle also wanted the public to experience what all the genomics

hubbub is about—and why they should care. "In ten years, maybe sooner, we will be faced with decisions that involve this technology every day," says DeSalle. "Should I have my genome checked for susceptibility to arthritis? Can my insurance plan handle some of my susceptibility genes? Can I choose traits for my child? The public needs to build its genomic vocabulary as rapidly as it can to cope with these possibilities." Short video documentaries and informative and cleverly designed installations embrace these complexities, highlighting the pros and cons of issues ranging from patient privacy to the

ubiquity of genetically engineered food. "We wrap the science around the social issues in this exhibition, kind of like a double helix," says DeSalle. "Society is one strand and science is the other." (And if you think you've never scarfed down some scientifically engineered munchies, think again.)

In addition to raising serious questions, the show also displays a sense of humor—a sick one. Those who share it will enjoy playing God at the Mutation Station, where you can get down and dirty with the DNA of a fruit fly. Twist a rung on a model of the fly's double helix and you replace a single DNA letter with another, thereby causing a point mutation that wreaks havoc on the fly's outward appearance—just glance over to a nearby screen for an animated morphing of your new creation. Exchanging a C for a T, for instance, results in the condition of proboscipedia, where an extra foot grows out of the mouth. (Luckily, no such point mutation exists for humans, although many of us *still* find a way to put our foot in our mouth.)

The exhibit's finale is a different kind of revolution. Rather than resort to the usual text-heavy panels that pontificate on the future, "The Genomic Revolution" takes an artistic turn. As you exit, a technology installation by Brooklyn artist Camille Utterback captures live video and then redraws your image using DNA's

A's, G's, T's and C's instead of pixels. "It is very appropriate to have an installation that reflects back on the visitor, because the exhibit is so much about humans and who we are," Utterback says. But DeSalle wasn't originally convinced. "I was a bit wary at first with the idea of an art piece to end the exhibition," he says. "As a scientist, my job is to define the scientific problems and provide the background and expertise that will bring the exhibition to the same level of accuracy and relevance as the rest of the museum." But after seeing Utterback's piece, he quickly changed his



CODE BOOKS Written out, the genetic information in the human genome would fill 150 Manhattan phone books; right, a DNA model built to scale.



mind. "This was a perfect ending for the exhibition because it does one very important thing," he says. "It provokes the visitor to ask, 'Am I only DNA?'" The answer DeSalle is hoping for, of course, is no—just as he's hoping museumgoers will walk away from "Revolution" knowing that a molecular-biology show doesn't only have to be about science.

"The Genomic Revolution" is at the American Museum of Natural History Saturday 26 through January 1.