

CSUEB unlocks the past with a swab of the cheek



MARJORIE RHODES-OUSLEY (right), associate director of Cal State East Bay's C.E. Smith Museum of Anthropology, examines photos in preparation for an upcoming exhibit *Immigrants All! Our Migration Tales and Genetic Trails*.



By [Katy Murphy](#)

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HAYWARD – ANDREA Moreira, a Brazilian anthropology student at California State University, East Bay, had always believed her family history was straightforward, that her ancestors had simply moved from Portugal to South America, where they settled.

But with a swab of the cheek — and an inquiry to a 100-year-old relative living in Brazil — Moreira inadvertently unlocked a family secret: Her great-great-great-grandmother had been captured from a South American tribe and forced to marry a Portuguese man, her great-great-great-grandfather.

“It’s a sad story,” she said, “but it’s good to know.”

The story of Moreira’s ancestors is one of 25 featured in an upcoming exhibit at the university’s C.E. Smith Museum of Anthropology. Her discovery — and the Feb. 24 opening of “*Immigrants All! Our Migration Tales and Genetic Trails*” — comes during a time of exploding public interest in DNA as a tool to extend the family tree beyond the age of written records.

At the university alone, about 100 students, employees and alumni have paid \$99 to learn about ancestors who lived tens of thousands of years ago.

The databases of Family Tree DNA, the Houston-based company analyzing the CSUEB data, contain the genetic records of 63,000 people, said Max Blankfeld, vice-president of operations and marketing.

When the company first offered a home sample kit in April 2000, it sold about five a week, Blankfeld said. Now, it sells about 500 weekly — not counting the tests associated with the National Geographic Society's Genographic Project, an ambitious 5-year effort to "map humanity's genetic journey through the ages."

For those searching for long-lost relatives as well as predecessors, the Family Tree package includes the e-mail addresses of (consenting) customers with similar genetic patterns.

"There's a lot of people searching for connections in their family," Blankfeld said.

At CSUEB the genetic project began in the fall of 2004 as a way to question perceptions of race on an ethnically diverse campus. The challenge facing anthropology professor George Miller and his students is to present a complex concept in a visual way that the average person can understand.

"It's been the most difficult thing we've ever done at this museum," Miller said.

To determine a person's origins, genetic researchers analyze a part of the DNA chain that doesn't combine during reproduction — and which therefore remains mostly intact through the generations. Telltale genetic mutations, which occurred in different populations as they migrated out of Africa, are also inherited.

Since it is believed that people with a similar set of mutations, or genetic markers, share a common ancestor, they are grouped together in what geneticists call a haplogroup.

In a cartoon Cal State East Bay anthropologists created to explain those terms, a superhero called Y-Man spells out the test results of the story's protagonist, Ernie Ebayley, who was assigned to Haplogroup R1b: "You've only been Irish for a few thousand years. Your Y-DNA markers show that at the end of Ice Ages your ancestors were Magdalenian cave artists in Spain — before that they were Aurignacian mammoth hunters on the Ukrainian steppes — and long before that they were some of the first Africans to venture north across the Arabian Peninsula into Central Asia."

Of course, genetic genealogy doesn't tell the whole story. Women can only unlock the secrets of their ancestry through DNA stored in their mitochondria, a part of the cell located outside the nucleus. Since mitochondrial DNA is passed down through a family's women, it provides clues only to a mother's mother's mother, and so on.

Men, too, can learn about their mother's lineage through mitochondrial DNA. Unlike women, they also can test the genetic information contained in their Y-chromosome, which is passed down from father to son.

To find out about their father's ancestors, a woman would have to convince a brother — or another male descendant — to send away for a sample kit.

Though the history of their entire ancestry is far from complete, those involved with the CSUEB project are glad to have the key to part of it.

Nancy Summerlin, an alumna of the university who returned to work on the project to see if her genealogical findings matched her genetic makeup, said she found out 31/2years ago that she had been adopted as a child.

Sure enough, Summerlin's genetic mutations place her squarely in Haplogroup V, the group thought to have migrated from Spain to Scandinavia, where she believes a great-grandparent had lived.

Likewise, the project revealed no surprises for Emilee Bargoma, 28, a biology student who was born in Nigeria. Her DNA results revealed that her family migrated from Africa's east coast, where everyone is believed to have originated, to the west of the continent. But the experience of seeing her origins on paper prompted her to return to Nigeria in December with her mother, who was estranged from her family nearly 30 years ago.

"It's almost like a secret that my genes have always known," Bargoma said.

As evidenced by CSUEB's growing genetic data bank, many affiliated with the campus also are anxious to unravel those secrets. Miller said requests for DNA sample kits have been coming in daily. The anthropology department has yet to determine what it will do with the information, he said, although there have been discussions about expanding the project.

Miller, who is an amateur family historian as well as an archaeologist, marvels at the way genetic genealogy has burst into mainstream consciousness. Some attribute the phenomenon to an American fascination with genealogy, paired with high-profile developments such as a case involving Thomas Jefferson and a son of Sally Hemings, one of his slaves at Monticello. Though the paternity of Hemings' six children was debated for centuries, a study released in 1998 revealed that at least one of her sons was fathered by one of the Jeffersons.

Some believe that the Genographic Project and a PBS film featuring the work of geneticist Spencer Wells also fired people's imaginations.

"It's gone from being an obscure research, academic, anthropological, genetic pursuit to becoming available to the public," Miller said. "Eventually, the hope is that the science will become refined enough that they will be able to say, 'U5A13 occurs within a very discrete area of Latvia.'"

The anthropology museum is located in Room 4047 of CSUEB's Hayward campus, 25800 Carlos Bee Blvd. The exhibit opens Feb. 24 with a 4 p.m. reception and will run through the spring quarter. It will be open from 10 a.m. to 4 p.m. Monday through Friday.

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