

When Ellen Ochoa was a college student in the late 1970s, a professor talked her out of majoring in engineering. He told her the math was "really tough." But she knew what he meant: too tough for a woman.

This month she will laugh at that professor, and at all the others who believed as he did. This month Ellen Ochoa will become the first Hispanic American woman in space, leading a team of astronaut researchers orbiting the earth aboard the space shuttle Discovery.

At 34, Ochoa is already a highly accomplished scientist and co-developer of several patents in optics research, her area of expertise. But this mission represents the fulfillment of Ochoa's greatest dream. "If there's one thing I want to do," she says, "it's to be an astronaut."

Born in Los Angeles and raised in La Mesa, Calif., Ochoa is the only one of five children to pursue a career in science. Her father, a department store manager, and her mother, a homemaker, were divorced when she was in middle school.

Having grown up in a state with a large Hispanic population, Ochoa says her Mexican heritage (on her father's side) was never an issue in her education or her career. "My name never mattered to anyone one way or the other."

However, her sex did matter. "Even though I was the top math student at my high school, no one ever suggested that I think about studying math or science in college," Ochoa says. "If I had been male, with the same track record, they certainly would have."

Ochoa entered San Diego State University with plans to pursue a career in music, as did two of her siblings. Although she was an accomplished classical flutist, she soon began to consider the odds against earning a living in that field.

Casting about for another major, Ochoa turned to engineering—and was met with nothing but discouragement from her advisers.

"While no one ever prevented me from doing anything, encouragement obviously makes a difference," Ochoa says. "I could have been successful at any number of majors. But sometimes you run into people who don't look beyond the obvious."

One professor made it very clear that he did not consider engineering to be an appro-



**Astronaut
Ellen Ochoa
exemplifies
modern Hispanas'
drive to excel**

CHARTING NEW PATHS

By Cheryl Kane



Photos courtesy NASA

priate field for a woman. "He tried to tell me how hard the math was, and he didn't know if I was up to the task. All this without even asking about my records or my grades."

Fortunately, Ochoa found a much warmer welcome in the physics department. She adapted well to her new major, graduating Phi Beta Kappa and valedictorian of the class of 1980.

That engineering professor must have been quite embarrassed when Ochoa received an engineering fellowship to Stanford University, earned a Master of Science degree, and followed it up with an IBM predoctoral fellowship to earn her doctorate in electrical engineering.

While Ochoa was in graduate school, some of her friends had begun to apply for jobs at the National Aeronautics and Space Administration. The more Ochoa learned about NASA's programs, the more interested she became.

"It was really then, in graduate school, that I decided this is what I wanted to do," she says.

Graduating from Stanford in 1985, Ochoa set her sights on a job connected with space exploration. She found a research staff position at Sandia National Laboratories in Livermore, Calif., where she helped develop and patent optical techniques for use in the space program and other industries.

Three years later, Ochoa was chosen to lead an optics research group at NASA's Ames Research Center in Moffett Field, Calif. Within six months, she was named Chief of the Intelligent Systems Technology Branch, leading a team of 35 engineers and scientists in the research and development of high-performance computational systems for aerospace missions.

There she met her future husband, Coe Fulmer Miles, a computer engineer. She

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