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### [Mae Jemison: Insights from a Barrier-Breaking Astronaut](#)



Dr. Mae C. Jemison is a dynamo with a great sense of humor and a long list of creds, including first African-American female [astronaut](#) to travel in space. Growing up on the South Side of Chicago, Jemison entered Stanford University at the age of 16. She has a Bachelor of Science degree in Chemical Engineering, a B.A. in African and Afro-American studies, and she spent over two years in the Peace Corps as a medical officer in West Africa. She is currently the CEO of her own technology design and consulting company and the Founder of [The Earth We Share](#).

I was able to hear her speak twice, and did a one-on-one with her covering topics from how science should be taught to what young girls are intuiting from popular culture.

Jemison was a featured speaker at a New York City [AAUW](#) event dealing with the lack of women and minorities in the STEM fields (science, technology, engineering, math). Presented was the research report, "Why So Few?" which examined gender biases, underrepresentation, and the social barriers that deter women from top achievement. Jemison, who has been the national science literacy spokesperson for [Bayer Corporation](#) for fifteen years, talked about the Campos Inc. [survey](#) of female and minority chemists and chemical engineers that outlined the lack of support and overt discouragement female and minority students receive.

At the AAUW appearance, Jemison drilled down on the stats and causes for the shortage of women in STEM. Much of the findings pointed to stereotypes that adversely affected performance for gender and ethnicity. Specifically, girls need to be encouraged from a young age to draw and play with building tools. They must be exposed to successful role models in math and science, and encouraged to adopt a "growth mindset" as opposed to a "fixed mindset" which limits potential. Jemison specified that girls are harder on themselves when accessing their abilities in "male fields" like math and science. It is essential for them to believe that they have the potential and abilities to be successful, and to recognize their career relevant skills.

Children's interest in science has been documented as occurring as early as age 11. Yet girls aren't choosing to work in STEM because they don't think they are going to enjoy it. For those who find it appealing, it is their strong personal interest that gets them through. Jemison wryly noted that for women, "the more competent [you are]...then you become less likeable." Advocating "changing the culture of the field," and creating more

role models, she suggested that "women need to bring their perspective to the table to help create the solutions."

Underscoring the need for self-confidence was a primary theme when Jemison delivered her talk to the audience at the [Omega Women and Power Conference](#). Exuding strength and self-assurance, Jemison stated that she "always knew that she would go into space" and was determined "to be part of the change" taking place in the science arena. "You have to make yourself known," she said. Jemison addressed how women are actively discouraged, and illustrated this contention with documented research showing that "when you tell girls that they aren't going to do well on a test, they believe it." A classic pro-active personality, Jemison maintained, "The choices we make create the realities of today and tomorrow." For her, the definition of empowerment means "the belief in yourself and that you have something to contribute." When asked about the feelings she had when she viewed earth from outer space she responded that it reaffirmed her connection to "her place in the universe." She added, "We all share a place in the universe."

When we sat down for our talk in the quiet environs of the Omega campus, the conversation began with a discussion about the need to promote science literacy in the United States. Jemison explained that the country has been losing ground since 1992. NASA and the aerospace sectors need to cull their talent from United States citizens. Since women and minorities are not encouraged to go into the sciences, it leaves a large reservoir of talent untapped. Her view of the general public's relationship to science was not encouraging. "Whether it's our response to the gulf oil crisis, issues of health care initiatives, or understanding statistics, we're not creating a science literate society."

For all those adults whose eyes glaze over when recalling the topics they learned by rote in school and decided that they would never need, Jemison challenged, "How can you understand if we should put regulations into place if we don't understand the complexity of ecosystems?" Jemison advocates for the importance of the basic building blocks of science knowledge in order to be an informed citizen. For her, the problem is "how we teach science." Replacing memorization with "experimentation" is her vision. She referenced the Bayer study saying, "Kids like science early on. The problem is we don't teach it hands on."

On green energy, Jemison noted that the country had dropped the ball when "we had the lead in the 1970s." When asked why, she replied, "We chose not to do it. Sometimes we fail to see that there are other possibilities out there besides the model that we have. It's a failure of imagination."

Moving back to the subject of girls and women in the STEM disciplines, Jemison repeatedly stressed what we are suggesting to girls about their innate abilities. She boiled it down to the need for "messaging, exposure, and expectations." And what does Jemison see as the predominant narrative being directed to girls? "Clothes, sexualization, and looks." She lamented, "It happens so early for young girls. It stands as a stumbling block if you want to get your hair dirty. You can't work at a dinosaur camp and worry if you're going to get your hair dirty or chip a nail. If we imply that's what's important, that's what kids will follow."

For a woman who has traveled in outer space, her key advice was down to earth. She concluded, "I think one of the issues that's really important for girls to understand--for anyone to understand who has not been included in the mainstream of what they want to do--Don't wait for anybody's permission. You don't need their permission."

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*Photo Courtesy of Omega Institute for Holistic Studies, Rhinebeck, NY*