

# US women and minority scientists discouraged from pursuing STEM careers, national survey shows

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Significant numbers of today's women and underrepresented minority chemists and chemical engineers (40 percent) say they were discouraged from pursuing a STEM career (science, technology, engineering or mathematics) at some point in their lives, according to a new Bayer Corporation survey.

U.S. colleges are cited by them as the leading place in the American education system where discouragement happens (60 percent) and college professors as the individuals most likely responsible for the discouragement (44 percent).

The U.S. K-12 education system falls short, too. On average, the survey respondents give it a "D" for the job it does to encourage minorities to study STEM subjects and a "D+" for [girls](#).

The Bayer Facts of [Science Education](#) XIV survey polled 1,226 female, African-American, Hispanic and American Indian chemists and chemical engineers about their childhood, academic and workplace experiences that play a role in attracting and retaining women and underrepresented minorities in STEM fields.

"If we want to achieve true diversity in America's STEM workforce, we must first understand the root causes of underrepresentation and the ongoing challenges these groups face," said Greg Babe, President and

CEO, Bayer Corporation. "We want to knock down barriers. If we can do that, we'll be able to develop the attitudes, behaviors, opportunities and resources that lead to success."

Other major findings include:

- Regardless of gender, race or ethnicity, interest in science begins in early childhood. Nearly 60 percent of the respondents say they first became interested in science by age 11. This parallels the findings of a 1998 Bayer Facts survey of American Ph.D. scientists, which included white men. In that survey, six-in-ten also reported interest in science by age 11.
- More than three-quarters (77 percent) say significant numbers of women and underrepresented minorities are missing from the U.S. STEM workforce today because they were not identified, encouraged or nurtured to pursue STEM studies early on.
- The top three causes/contributors to underrepresentation in STEM include lack of quality science and math education programs in poorer school districts (75 percent), persistent stereotypes that say STEM isn't for girls or minorities (66 percent) and financial issues related to the cost of education (53 percent), according to the survey respondents.
- They say science teachers play a larger role than parents in stimulating and sustaining interest in science. During the elementary school years, 70 percent of the respondents say teachers have the most influence. During high school, 88 percent say teachers do.
- Nearly two-thirds (62 percent) of those polled say

underrepresentation exists in their company's/organizations/institution's workforce.

- Leading workplace barriers for the female and minority chemists and chemical engineers include managerial bias (40 percent), company/organizational/institutional bias (38 percent) and a lack of professional development (36 percent), no/little access to networking opportunities (35%), and a lack of promotional/advancement opportunities (35 percent).
- Nearly three-quarters (70 percent) of the chemists/chemical engineers say it is harder for women to succeed in their field than it is for men, while more than two-thirds (67 percent) think it is more difficult for minorities to succeed than it is for non-minorities.
- Across the board, respondents give their companies/organizations/institutions a "C" for having women and underrepresented [minorities](#) in senior positions to serve as role models and mentors for the younger employees.

"This and previous Bayer Facts surveys confirm something I've long known - that interest in science is genderless and colorless," said Dr. Mae C. Jemison, astronaut, medical doctor, chemical engineer and Bayer's longtime Making Science Make Sense® spokesperson. "All children have an innate interest in science and the world around them. But for many children, that interest hits roadblocks along an academic system that is still not blind to gender or color.

"These roadblocks have nothing to do with intellect, innate ability or talent," said Dr. Jemison. "On the contrary, they are the kinds of larger, external socio-cultural and economic forces that students have no control over. As students, they cannot change the fact that they do not have

access to quality science and math education in their schools. But adults can. And we must."

**More information:**

Survey Methodology

The survey, conducted by Pittsburgh-based research firm Campos Inc., polled a total of 1,226 Caucasian women, Asian women, African-American men, African-American women, Hispanic men, Hispanic women, American Indian men and American Indian women. For each group, a minimum number of interviews were established to determine any statistically significant differences among the groups. This was done to reveal commonalities and differences of experiences among the groups. Based on this sample size, the statistical reliability achieved is +/-3 percent margin of error at a 95 percent confidence level.

Provided by Bayer Corporation

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