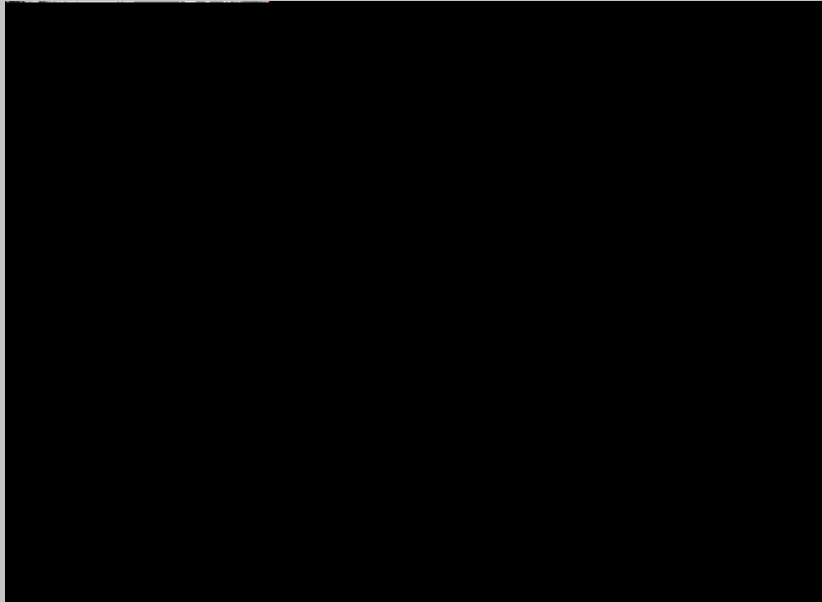


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Why Are There Still So Few Women in Science?



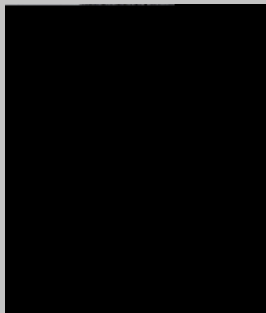
Mondadori Portfolio, via Getty Images

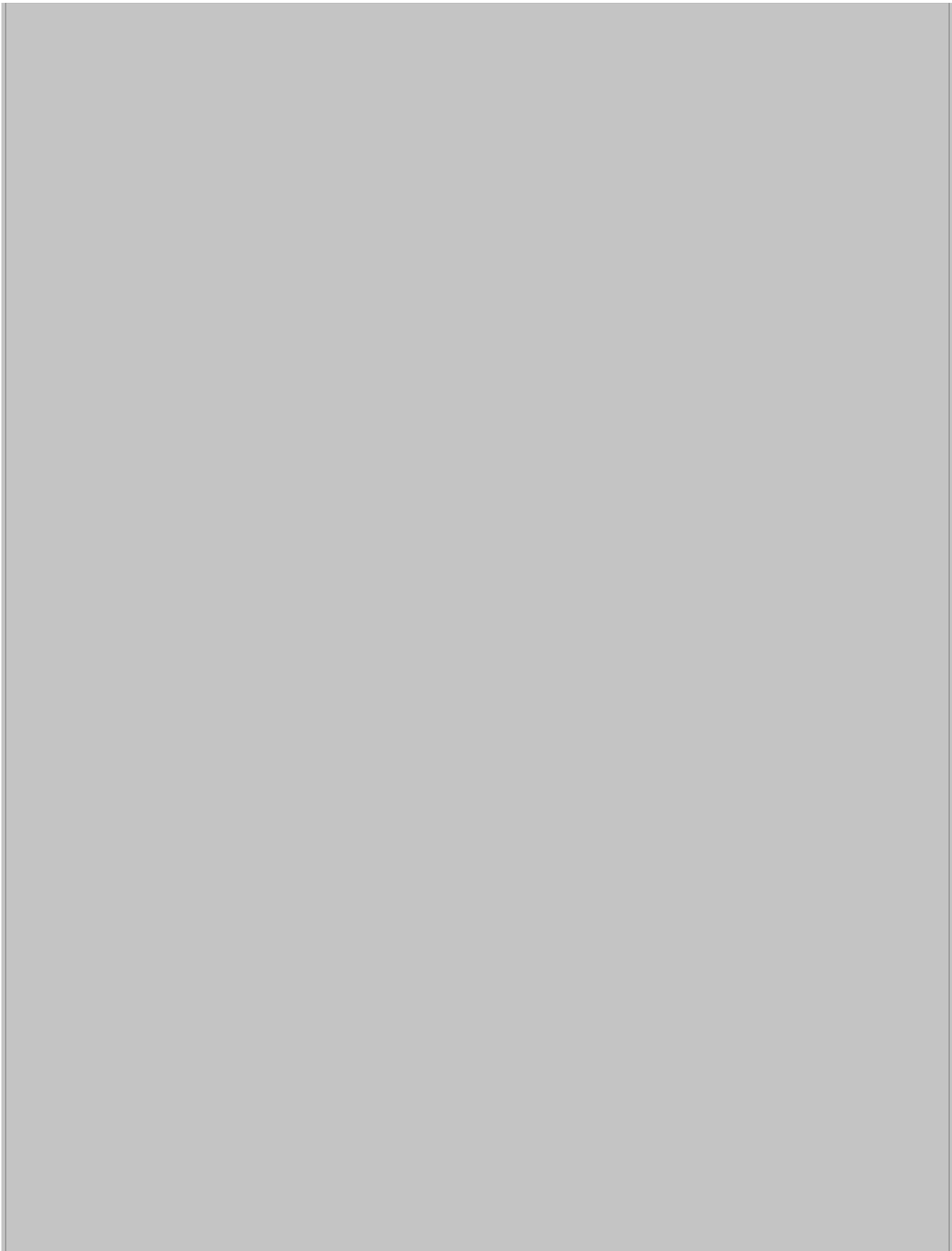
At the Solvay Conference on Physics in 1927, the only woman in attendance was Marie Curie (bottom row, third from left).

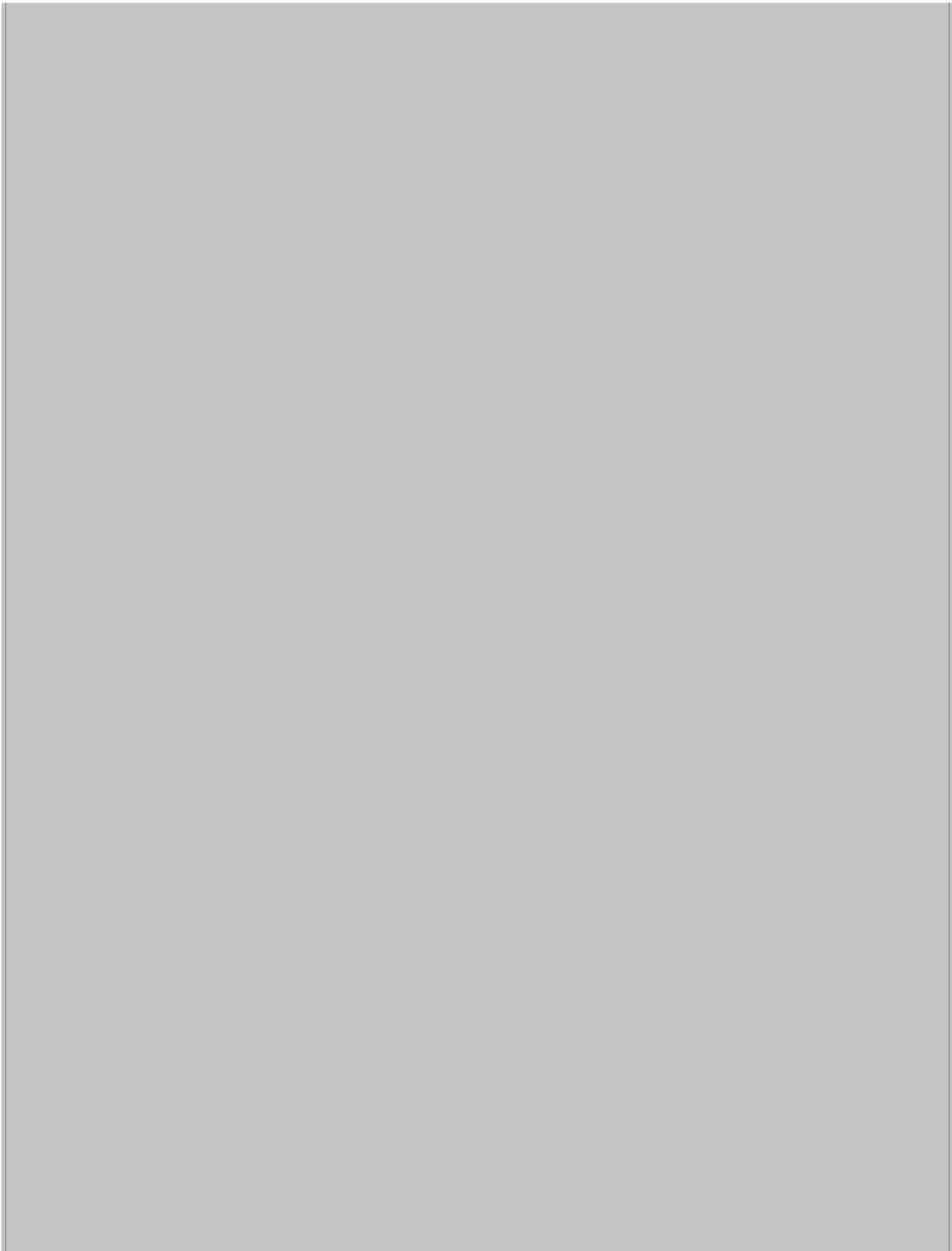
By EILEEN POLLACK

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Last summer, researchers at Yale published a study proving that physicists, chemists and biologists are likely to view a young male scientist more favorably than a woman with the same qualifications. Presented with identical summaries of the accomplishments of two imaginary applicants, professors at six major research institutions were significantly more willing to offer the man a job. If they did hire the woman, they set her salary, on average, nearly \$4,000 lower than







physics." She expected the teacher to put an end to the teasing, but he didn't.

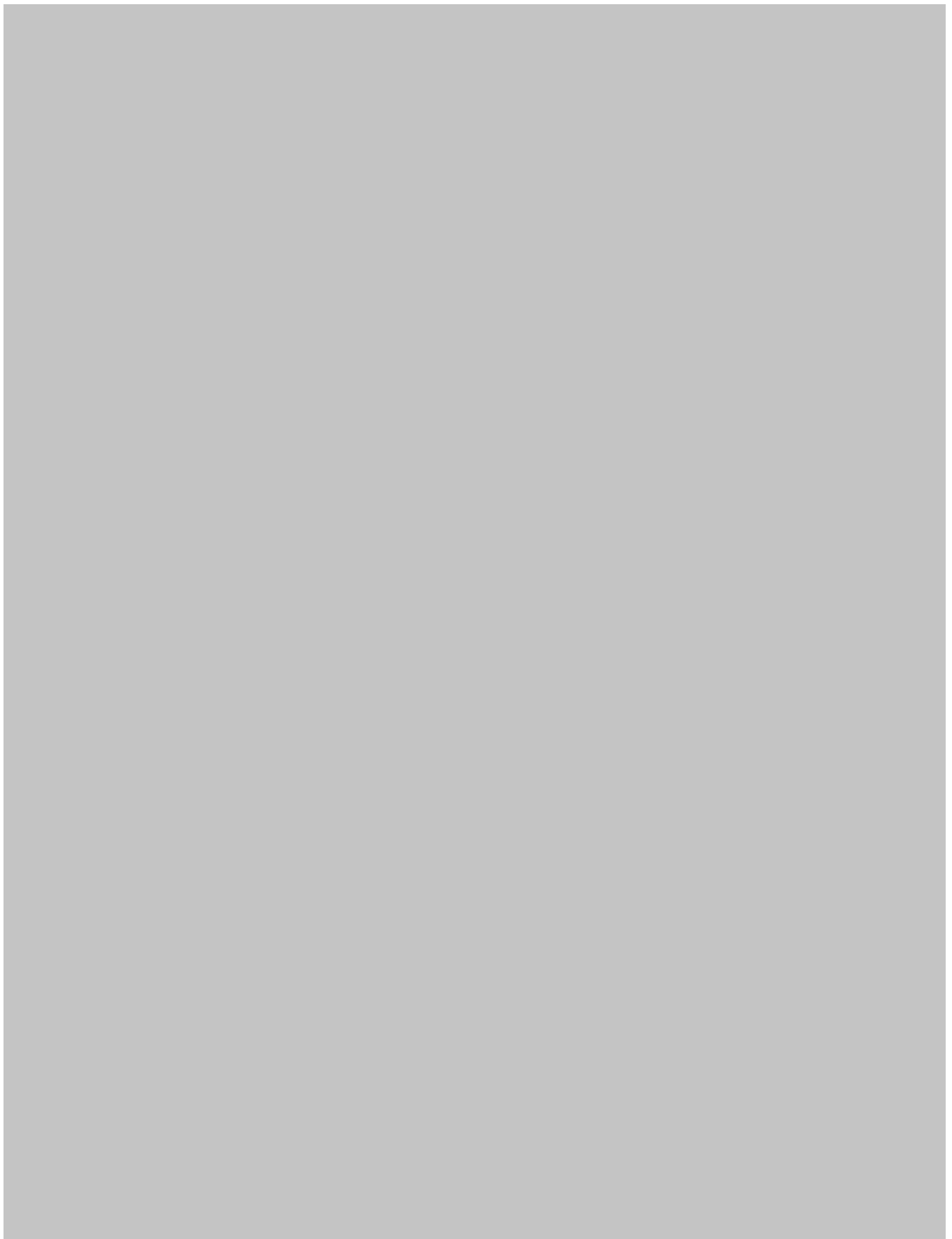
Other women chimed in to say that their teachers were the ones who teased them the most. In one physics class, the teacher announced that the boys would be graded on the

almost always the children of immigrants, and very rarely female. For example, between 1959 and 2008, Bulgaria sent 21 girls to the International Mathematical Olympiad, while the U.S., from 1974, when it first entered the competition, to 2008, sent only 3; no woman even made the American team until 1998. According to the study's authors, native-born American students of both sexes steer clear of math clubs and competitions because "only Asians and nerds" would voluntarily do math. "In other words, it is deemed uncool within the social context of U.S.A. middle and high schools to do mathematics for fun; doing so can lead to social ostracism. Consequently, gifted girls, even more so than boys, usually camouflage their mathematical talent to fit in well with their peers."

The study's findings apply equally in science. Urry told me that at the space telescope

determination and encouragement seem to be as important as raw talent. Even at the very highest levels, test scores might be irrelevant; apparently, Richard Feynman's I.Q. was a less-than-remarkable 125.

T determinant of whether a woman goes on in science might be whether anyone encourages her to go on. My freshman year at Yale, I earned a 32 on my first physics midterm. My parents urged me to switch majors. All they wanted was that I be able to earn a living until I married a man who could support me, and physics seemed unlikely to accomplish either goal.



person had said, 'You can do this.' " She laughed. "Women need more positive reinforcement, and men need more negative reinforcement. Men wildly overestimate their learning abilities, their earning abilities. Women say, 'Oh, I'm not good, I won't earn much, whatever you want to give me is O.K.' "

One student told Urry she doubted that she was good enough for grad school, and Urry asked why — the student had earned nearly all A's at Yale, which has one of the most rigorous physics programs in the country. "A woman like that didn't think she was qualified, whereas I've written lots of letters for men with B averages." She won't say that getting a Ph.D. is easy. "It is a grind. When a young woman says, 'How is this going to be for me?' I have to say that yes, there are easier things to do. But that doesn't mean I need to discourage her from trying. You don't need to be a genius to do what I do. When I told my adviser what I wanted to do, he said, 'Oh, Meg, you have to be a genius to be an astrophysicist.' I was the best physics major they had. What he was really saying was that I wasn't a genius, wasn't good enough. What, all those theoreticians out there are all Feynman or Einstein? I don't think so."

N , I met five young Yale alumnae at a Vietnamese restaurant in Cambridge. Three of the women were attending graduate school at Harvard — two in physics and one in astronomy — and two were studying oceanography at M.I.T. None expressed anxiety about survivin.² (y) -bris

The committee's most resonant finding was that the discrimination facing female

areas except likability, where Jennifer scored nearly half a point higher. Moreover, John was offered an average starting salary of \$30,238, versus \$26,508 for Jennifer.

at every step as they fall victim to their lack of self-esteem, their misperceptions as to who

to find it.”

Like Stewart, Urry thinks Handelsman’s study might catalyze the changes she has been agitating to achieve for years. “I’ve thought for a long time that understanding this implicit bias exists is critical. If you believe the playing field is equal, then any action you take is privileging women. But if you know that women are being undervalued, then you must do something, because otherwise you will be losing people who are qualified.”

Most of all, we need to make sure that women — and men — don’t grow up in a society in which they absorb images of scientists as geeky male misfits. According to Catherine

through. "As my mother always taught me," she said, "success is the best revenge."

As so many studies have demonstrated, success in math and the hard sciences, far from being a matter of gender, is almost entirely dependent on culture — a culture that teaches girls math isn't cool and no one will date them if they excel in physics; a culture in which professors rarely encourage their female students to continue on for advanced degrees; a culture in which success in graduate school is a matter of isolation, competition and

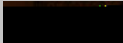
A version of this article appears in print on October 6, 2013, on page MM31 of the Sunday Magazine with the headline: Can You Spot The Real Outlier?.

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