

Christianity Today Magazine

Why Do Fewer Christian Women Work in Science?

Sociologists explain the data behind the gender gap in STEM careers.

Elaine Howard Ecklund and Robert A. Thomson Jr. February 17, 2020

In March of last year, NASA [canceled a would-be all-woman spacewalk](#) because it didn't have enough suits to fit the female astronauts. (By October, it rectified the situation and [completed the walk](#).) For many, the incident highlighted how [women are often marginalized](#) in science, technology, engineering, and mathematics and are [underrepresented in science](#) careers. National Institutes of Health director Francis Collins—an outspoken Christian—has also spoken out about science's glaring need to be more inclusive, especially among leadership. He wrote an open letter stating, "It is time to [end the tradition in science of all-male speaking panels](#), sometimes wryly referred to as 'manels.'" He now plans to turn down speaking engagements that do not seriously consider other scientists of various backgrounds for the same opportunities.

His concern is backed by data. We studied academic biologists and physicists in [eight international contexts](#), conducted through Rice University's [Religion and Public Life Program](#), and found that women accounted for only 17 percent of US physicists. Biology tends to have [better gender parity](#), and yet only 39 percent of US biologists in our sample were women, with most of these concentrated in lower ranks rather than full professorships. Christian women were particularly underrepresented, accounting for only 7 percent of scientists participating in our study, a finding discussed more in our book, [Secularity and Science: What Scientists Around the World Really Think about Religion](#).

And when we look at other social groups that are deeply marginalized in science, the picture becomes even starker. Only 12 percent of US biologists and physicists in our sample were nonwhite women, and of them, only 14 percent were Christian. To make the point even sharper, in our pool of 1,989 US biologists and physicists, there were only 7 black Christian women.

Christian women in science work in a multifaceted context, facing a world not only where they publish less and make less money than their male counterparts but also where religion and science exist in a complicated relationship. Yet their contributions are deeply needed: Solutions to problems we face today might not be solved if they don't come from all sectors of society.

Religion, science, and gender

Contrary to the popular stereotype, [not all scientists are atheists](#). In fact, we found that nearly a quarter of our US scientists identified as Christian. But in contrast with other sectors of society where sociologists have [found](#) atheists to be marginalized, academic science seemingly privileges non-religion. Christians in science are substantially underrepresented in a nation where more than [70 percent](#) of people identify as Christian, and they are particularly underrepresented in the most elite US research universities.

Most scientists do not believe science and religion are inherently in conflict. A Christian physicist we interviewed for our study told us, "I grew up with the notion that you shouldn't be afraid of knowledge. I learned this both in religion and from science." That said, scientists identifying as Christian report more discrimination than those with no religious affiliation.

About 72 percent of Christians in our sample reported experiencing some form of discrimination, including 28 percent who have perceived the discrimination to be because of their religion, compared to 62 percent of unaffiliated scientists reporting some form of discrimination. A strong majority (65 %) of Christians report that their colleagues have negative attitudes about religion, and unaffiliated scientists don't necessarily disagree—54 percent of them also say their scientist colleagues have negative attitudes about religion, often (as our research shows) for political rather than religious reasons.

Furthermore, Christian women face barriers in the workplace because of both gender and religion. While our data suggest that Christians actually tend to earn slightly more than non-Christians in science, the Christian advantage in pay for women is nullified by a gender penalty. Our data also reveal that women publish significantly less.

Moreover, 88 percent of Christian women report having been discriminated against in the context of their work—including 26 percent because of their religion and 69 percent because of their gender.

The second shift at home

When talking about gender in the workplace, notions that women choose occupations that pay less or have lower status are popular. But that logic does not seem to apply in science. For one thing, according to 2018 data from the National Science Foundation, girls of a very young age tend to express interest in science at levels [equal to](#) those of boys, despite lingering social norms that may still reward boys for “science-mindedness” more than girls.

Once in school, however, women seem to drop out of science careers at higher rates than men—a phenomenon some refer to as the “leaky pipeline.” According to our data, women account for 20 percent of physicists and 47 percent of biologists in graduate school, but these figures drop to 10 percent and 27 percent, respectively, among scientists with tenure.

The flip side of this, according to research, is that, while women have been gaining greater equality in the workplace nationally, women still pick up most of the slack at home, [even if the household espouses an egalitarian ideology](#) about work and life, as most scientists do. Many women opt out of elite science careers because of the sense that they will impede family formation. And sociologists Jeremy Uecker and Lisa Pearce [found](#) that Christian women—but not men—attend less-prestigious colleges than their standardized test scores would predict, many of them voicing reasons related to the desire for motherhood.

Indeed, we found that women in science are less likely than male scientists to be married with kids. Simply put, it is easier for men than for women to have a family and meet the career demands of an academic scientist. We also found that 47 percent of Christian women in science say they have had fewer children than they would have liked because of their career, compared to 37 percent of Christian men. And women who do marry and have children are at a disadvantage in elite science.

Nevertheless, many Christian women pursue careers in science motivated at least in part by their faith. One biologist told us, “My religion pushes me towards research of medical value because helping other people is important to me.” A physicist told us her “pursuit of knowledge is part of a search for God.” She explained: “I encounter the gift of creation in my work.”

So is there a way forward to greater inclusion of Christian women in science? Perhaps. But it may require [substantial investment](#). The larger cultural issues related to how boys and girls are

raised, what they grow up aspiring to do, how they are treated in the workplace, and how we divide household labor are daunting and will require awareness, motivation, and concerted efforts across society, including among Christians. But it doesn't have to be a leap. For example, Christians have historically supported education around the world, including among girls, as [CT reported](#) in 2014.

The good news is that, in principle, [diversity and inclusion are good for science](#) and good for the church. For example, scholars have argued that diversity along race, gender, and ethnic lines [increases creativity and problem-solving](#) in science. Consider the work of women of color like NASA mathematician Katherine Johnson, made famous by the popular movie *Hidden Figures*, and doctor and former US Surgeon General Regina Benjamin. As a result of the different social worlds they inhabit, women have developed inventions related to the home and their gender-segregated jobs. And as our nation was tested simply by sending women into space, we have also been rediscovering the pivotal roles of women in [getting us to the moon](#). There is a robust Christian theology arguing for the elevation of women's voices in society, regardless of differing views on female ordination or women in church leadership.

Theology teaches nature is a part of God's revelation. From a Christian standpoint, then, the study of nature through science is a good calling. Since we know that diversity is good for science, inclusion of women in this endeavor will ultimately, for Christians, reveal more of God.

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