

Secularity and Science

By Elaine Howard Ecklund and colleagues

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The authors of *Secularity and Science: What Scientists Around the World Really Think About Religion* completed the most comprehensive international study of scientists' attitudes toward religion ever undertaken, surveying more than 20,000 scientists and conducting in-depth interviews with over 600 of them. From this wealth of data, the authors extract the real story of the relationship between science and religion in the lives of scientists around the world. The book makes four key claims: there are more religious scientists than we might think; religion and science overlap in scientific work; scientists - even atheist scientists - see spirituality in science; and finally, the idea that religion and science must conflict is primarily an invention of the West. Throughout, the book couples nationally representative survey data with captivating stories of individual scientists, whose experiences highlight these important themes in the data. *Secularity and Science* leaves inaccurate assumptions about science and religion behind, offering a new, more nuanced understanding of how science and religion interact and how they can be integrated for the common good



About the Author

Elaine Howard Ecklund is the Herbert S. Autrey Chair in Social Sciences and Professor of Sociology in the Rice University Department of Sociology, director of the Religion and Public Life Program in Rice's Social Sciences Research Institute, and a Rice Scholar at the James A. Baker III Institute for Public Policy. She is also a Faculty Affiliate in the Rice Department of Religion. Ecklund received a B.S. in Human Development and an M.A. and Ph.D. in Sociology from Cornell University. Her research focuses on institutional change in the areas of religion, immigration, science, medicine, and gender. She has authored numerous research articles, as well as four books with Oxford University Press and a book with New York University Press. Her latest book is *Secularity and Science: What Scientists Around the World Really Think About Religion* (Oxford University Press, 2019) with authors David R. Johnson, Brandon Vaidyanathan, Kirstin R. W. Matthews, Steven W. Lewis, Robert A. Thomson Jr., and Di Di.

Question #1: In your book's introduction you note that "scientists have long been viewed as strong carriers of the process of secularization" and that "scholars have assumed a linear relationship between science and secularization" regardless of national culture and science infrastructure. Was this perspective the principle catalyst for this research?

Secularity and Science is motivated by a number of factors, including this notion of scientists as carriers of secularization, which calls our attention to how scientists are most poised to propagate big ideas about how we understand the role of science in society. Some sociologists speculated that the rise of cognitive rationality in society, driven largely by science and modernization, would lead to a decline of religious belief. While this prediction has not entirely panned out as scholars expected it would, scientists nevertheless play an important role in the public understanding of science and religion. And we wanted to understand all the nuances of what scientists think by going to the source – scientists themselves. To that end we did surveys with over 22,000 scientists and in depth interviews (often face-to-face conversations) with over 600 of them.



In past research, our understanding of what scientists think about religion has overwhelmingly focused on scientists at elite universities in the United States. This understanding is important but narrow: religious

characteristics and science infrastructures vary from country to country, most scientists are not at elite universities, and past work has not focused on graduate students and postdoctoral scientists not yet in academic positions. These we might think of as empirical blind spots in our understanding of the science-faith interface. *Secularity and Science* seeks to fill these gaps, using the most rigorous tools social science offers.

Question #2: Your research team decided to focus on the relationship of science and faith for biologists and physicists across eight nations. Why did you pick professionals in those two disciplines? And why were these eight nations selected for this cross-comparative study?

Physics and biology are ideal disciplines for studying the relationship between science and religion. In a number of countries, there have been public debates over the theory of biological evolution, which shows that humans and other living things have evolved over time through natural processes. Based on the specific form of their belief in God as creator and the specialness of humans in creation, some religious individuals and groups reject the scientific explanation for the origin and development of human life in favor of alternative explanations drawn in part from their faith traditions. In physics, the big bang theory, the prevailing scientific explanation for the origin of the universe, conflicts with certain religious views. Some religious believers (most notably, conservative Protestants) see this model as being at odds with their belief that there is a creator of the universe. Methodologically, physics and biology are ideal because, as core scientific disciplines, most universities around the world have departments comprised of scientists in these fields.

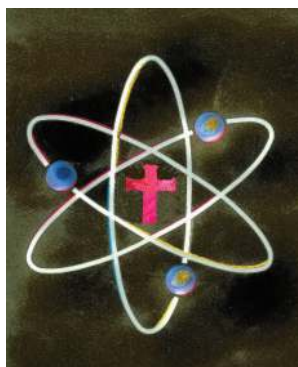
Secularity and Science's focus on France, Hong Kong, India, Italy, Taiwan, Turkey, the United Kingdom, and the United States is motivated primarily by theoretical concerns related to religiosity, religious traditions, and science infrastructure. With respect to religiosity, how scientists think about religion is influenced by whether they are situated in a highly secular country like France versus a highly religious country like Turkey. Religious traditions vary in terms of perceived ethical or moral tensions with science, with some Western nations such as the United States exhibiting persistent debates in the public sphere relative to countries with non-Western religious traditions such as the presence of Hinduism in India and Buddhism in Taiwan. And the development of science infrastructure also matters.

The US and UK, for example, are at the core of the global science infrastructure, meaning aspirant and practicing scientists around the world work and train in these countries—often bringing their religious traditions with them. In other countries, such as Italy or Turkey, there is less circulation of scientists, making the presence of religion much more homogenous. We sought a design that allowed us to capture these broader characteristics and study how they shaped scientists' views.

Question #3: One of the challenges in a study about the relationship of science and religion is in the definition of religion. To conduct this study, your group needed to settle on a working definition of religion. Also, because this study included not only Christians but adherents to other traditions of belief, it was more difficult to determine a working definition. On what did you settle to describe religious faith?

Definitions of religion vary from a system of beliefs about God or higher powers, to more functional definitions that emphasize religion's social or psychological role in people's lives. In writing *Secularity and Science*, we were not trying to determine the best way to define religion. Rather, we asked scientists to define religion in their own terms and used their definitions when analyzing and considering our findings.

Question #4: You observe that the United States has an unusual cultural context for the relationship of science and religion that does not necessarily reflect more global experiences. In what ways is the science and religion relationship quite particular to the US?



The US is somewhat unique, largely because it exhibits the most consistent debates about religion and science in the public sphere. These include, for example, questions about whether and how evolution should be taught in schools or the moral dimensions of genetic engineering.

State and federal policymakers openly express skepticism of science and scientists, most notably in relation to climate change. The US has public policy think tanks, such as the Discovery Institute, which advocate for intelligent design perspectives that are widely rejected by the scientific community. The US also has more than 100 of the preeminent research universities in the world. These unique features often generate misleading assumptions about both religious individuals and scientists, such that what religious and nonreligious individuals in and out of science *actually think* about the science-faith interface is overshadowed mainly by the loudest rather than the most numerous voices.

Question #5: In Europe across the three countries studied (France, Italy, and the U.K.), perceptions about the relationship of science and religion are quite different among them. What factors seem to account for such major differences among them? With the outflow of Turkish scientists, many of whom are Islamic, into the European context, what type of effect might this have in time?

Immigration patterns and national sentiment about immigration all influence perceptions about the relationship of science and religion within a country. A country's scientific infrastructure is closely tied to immigration. The more elite a country's scientific infrastructure, the more attractive it is to scientists from other countries. Immigrant scientists often bring their religion with them, which in turn has an effect on how religion comes up and is perceived in the scientific workplace. In Italy and Turkey, which have strong but less expansive science infrastructure than the UK and US, for example, we expect there is less religious diversity within the scientific community.

Question #6: In Asia your research notes lower levels of tension between science and religion as well as freer expression of religion in the scientific workplace. While religious practices are extensive, the cultures and scientific communities in India, Hong Kong and Taiwan are not populated with Christian majorities.

Do Asian epistemologies, cultural traditions, histories, or lived experiences make the relationship of science and religion less conflictual?

The science-religion conflict narrative seems to be somewhat of a Western and thus Christian-centric phenomenon. There is often freer expression of religion in the scientific workplace in these nations where the conflict narrative is less abundant. We did find that in Hong Kong in particular there is a residual history of Christianity in the best primary and secondary schools (in Hong Kong it is more mainstream), where budding scientists first receive their training. There scientists sometimes mentioned attending educational institutions founded by Christians, where they had to read the Bible and sing hymns in the morning. Although these institutions have become more secular, several scientists said Christians still control the school boards. We also found the perception exists among scientists that a Christian elite controls science education and research funding. One scientist, for example, told us she believes there was a Christian conspiracy to deny research funding and advancement to atheists as well as Chinese from the mainland. A significant minority of Hong Kong scientists also mentioned they were likely to meet science faculty and administrators at their Christian churches, and that churches are good places for networking that helps their scientific careers, a very different intersection between religion and science when compared to some of the other regions we studied.

Question #7: Your researchers have documented four big claims about the relationship of science and religion. What are the four big findings from your research across the eight nations?

First, we find that there are more religious scientists than we might think. Second, only a minority of scientists perceive the relationship between science and religion as one of conflict. Most scientists around the world, including in highly secular contexts such as France and the UK, view the relationship between these two spheres as one of independence or collaboration.

Across all of the regions that we examined the conflict view never exceeds one-third of overall scientists; nor do atheist scientists overwhelmingly embrace this view. Third, there are scientists who see spirituality in their work. Fourth, even as many scientists view science and religion as independent of one another and others compartmentalize their faith at work, religion still comes up in this highly secular workplace. University students may vocalize faith-based perspectives in class discussions. Scientists may need to accommodate the religious practices of their graduate students, such as working around holidays or the timing of prayers. Religion can come up as a matter of small talk. It can also shape the moral decisions that scientists make about what it means to be a good scientist.

Question #8: Your book notes that “religious scientists who are highly respected in their profession have the potential to act as boundary pioneers.” What are the tasks of such pioneers? Should we encourage scientists to become such pioneers?

We found in some of the nations we studied, but particularly in the US and UK, where there are tensions between some in the scientific community and some in religious communities, that religious scientists who are highly respected in their profession have the potential to act as *boundary pioneers*. We find that working closely with a religious scientist who has developed a successful career seems to illustrate to a nonreligious scientist that science and religion do not necessarily conflict with one another. Among scientists, one of the most prevalent justifications we heard for why there is not innate conflict between being religious and being a scientist was that they had worked with a successful religious scientist. The tasks then of the “boundary pioneer” is to help those in different communities to understand one another by being a living representative of what it can mean to inhabit both worlds. The work of a boundary pioneer can be taxing but also extraordinarily worthwhile as a way of bridging communities in conflict.