

## QnAs with Marcia McNutt

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When geophysicist Marcia McNutt learned that she had been nominated to stand for election as president of the National Academy of Sciences (NAS), she modestly pointed out to the selection committee that, although she felt honored, she was surprised to be chosen from a pool of what were surely far more deserving scientists. McNutt's self-effacing remark belies the unique blend of expertise and experience she brings to the job as leader of the nation's premier advisor on science and technology. Over a career spanning more than three decades, McNutt has worn many hats—as a researcher at the forefront of discoveries in ocean science, as the director of a major research institution, as a political administrator plunged into the tumultuous heart of catastrophes, and as an editor at the leading edge of scientific publishing. After a four-year stint as director of the US Geological Survey (USGS), where she coordinated responses to several headline-nabbing natural and manmade ecological disasters, McNutt served as editor-in-chief of *Science* magazine, where she quickly cut her editorial teeth, laying claim to a legacy rich with exemplary initiatives aimed at raising the ethical standards of scientific publishing in the digital era. The array of editorials she penned while at the journal mirrors the intellectual fierceness and forthrightness that mark her distinguished career. She has been often portrayed as an aspirational icon for young female scientists, and many elements in her biography—barrel-racing equestrian, accomplished basic researcher, and level-headed leader—bolster the image. In July 2016, McNutt took the reins of the Academy from her predecessor Ralph Cicerone. McNutt spoke to PNAS about aspects of her career and her vision for the Academy.

**PNAS:** Your scientific career began with an early interest in physics while you were an undergraduate in Colorado. Before long, you chose to focus on geophysics. How did you become interested in geophysics?

**McNutt:** Going into my final year as a physics major at Colorado College in the mid-1970s, I thought I would pursue one of the fields in physics that were the specialties of my instructors. These were popular fields that figured commonly in the physics lore of the time, like high-energy physics and astrophysics. But one of my physics professors advised me against entering those fields; there were queues forming, he said, for people who wanted telescope time to do astrophysics. What's more, I would be one in a crowd of people



**Image caption:** Marcia McNutt. Image courtesy of Stacey Pentland (photographer).

contributing to findings. He handed me an article that had just been published in *Scientific American*; it was the first paper for popular audiences on plate tectonics. Being in Colorado, I had taken some geology courses, of course, but I had not thought about majoring in geology, mostly because it seemed a largely qualitative discipline. But when I read that article on plate tectonics, I was blown away. It changed my life. Most of the plate boundaries are under water, so I decided that I would become an oceanographer. That's how I came to geophysics.

**PNAS:** After graduate school at the Scripps Institution of Oceanography, you spent more than 15 years in academia, specifically at Massachusetts Institute of Technology (MIT), where you headed a laboratory. You then accepted a leadership role at the Monterey Bay Aquarium Research Institute (MBARI), and have since focused on administration. What prompted the switch?



