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The corporate level — The female geophysicist's experience

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Reaching an organization's highest levels — ascending to the “C-suite” as it is often termed — is the goal of leaders in both the academic and corporate world. To reach the highest ranks of an organization is not only difficult, but is also a journey hampered by many obstacles. It is not sufficient to be technically proficient and have people skills. It is also imperative to be politically savvy, possess tremendous resilience, and have superior networking capabilities.

The journey to the “C-suite” is difficult for all. By observing the percentage of women in this elite group, it does, however, appear that the slope to get there is steeper for women. Female executives are a minority in most sectors of our economy and certainly a minority in the geosciences.

We reached out to two female geoscientists who have made it to the top levels of their organizations: Maria Zuber, vice president for research at the Massachusetts Institute of Technology (MIT), and Angela Strank, chief scientist and head of downstream technology at BP — two incredible women who have made it to the very top; one in academia and one in industry. We asked them a series of questions to peek into their experience and to see how they managed to achieve their amazing accomplishments.

Zuber received her PhD in geophysics from Brown University. She worked at Johns Hopkins University and at NASA's Goddard Space Flight Center in Maryland before joining the faculty of MIT in 1998. Zuber has been involved in more than half a dozen NASA planetary missions aimed at mapping the moon, Mars, Mercury, and several asteroids. She was the chair of the Department of Earth, Atmospheric and Planetary Sciences from 2003–2012 and was the first woman to lead a science department at MIT. Since 2012, she has been vice president for research at MIT and is the E.A. Griswold Professor of Geophysics. Zuber was recently named the chair of the National Science Board.

Strank received her PhD in geology from the University of Manchester and the Institute of Geological Sciences. She joined BP in 1982 as an exploration geologist. Since joining BP, Strank has held a variety of technical and commercial leadership roles in BP's upstream and downstream businesses and in its corporate center, working all over the world. She currently holds two senior leadership roles as BP chief scientist and head of downstream technology. She is a member of BP's downstream executive leadership team, and is responsible not only for technology across BP's refining, petrochemicals, lubricants, and fuels businesses, but also for developing strategic options to ensure BP can benefit from developments in science and technology worldwide.



Angela Strank



Maria Zuber

Q: What sparked your interest in geophysics/geoscience?

Zuber: My interest started with amateur astronomy, building telescopes, and studying space. I gravitated to geophysics upon the realization that the planets were moving beyond being points of light in a telescope and were rather worlds to be explored.

Strank: I was always interested in natural sciences and as a young girl, was often out in the garden getting muddy, looking for insects and interesting things in the soil, and looking up at the sky, wondering how the earth worked. My father was an engineer and an architect, and he always said that he would support me in whatever I wanted to do. He inspired me to ask questions and discover more. I became a geologist by accident. I originally applied to study chemistry at university, but we had to take a subsidiary subject and I chose geology. After one field trip, I was hooked on a subject that explains how the earth actually works.

Q: Did you have any mentors?

Zuber: In my scientific career, I have had plenty of mentors, all men. They cared a great deal about my career development and I couldn't have gotten by without them.

Strank: Rather than mentors, there have been many people in BP who have encouraged me and given me the opportunities to develop my skills in new and different technical, commercial, and leadership roles throughout my career. I would also say that two people have inspired me: my father and Sir David Attenborough, who has had a long career making the natural world compelling, simple, and wonderful for so many people around the world, and that is a wonderful gift.

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Q: We have few female geoscience role models in the “C-suite.” To what do you attribute your success?

Zuber: I’m not afraid to fail. It gives one the freedom to turn dreams into goals and sometimes even accomplishments, realizing that sometimes things can go really badly.

Strank: I knew I had to differentiate myself, so I did a PhD in micropalaeontology. It was a very specialized and sought-after skill set in oil and gas exploration and was my entry ticket to the industry. Being focused, determined to succeed in this industry, and professional has helped me to progress within my career.

Q: What challenges have you had to overcome to get where you are?

Zuber: There have been many, but I don’t dwell on them because I am always about looking forward. Every time a rocket carrying one of my experiments launches, my career flashes before my eyes. Bracing for very public failure, which has occasionally happened, provides perspective. At least as difficult have been the challenges of trying to establish a reputation in a crowded field, of balancing career and family, of the promising graduate student who doesn’t work out, and of the external circumstances that affect you and over which you have no control.

Strank: When I joined BP, getting into the industry was quite difficult as a woman. Working with mostly men, you had to be pioneering and determined about what you needed to accomplish, and also change perceptions about what women can and can’t do. I stood out as a woman in those days, especially offshore. On my first trip, I had to sleep in the medical center because there was no female accommodation. But people were very welcoming, and soon, we just worked together as a team.

Also as a new mother, I remember taking six weeks maternity leave. Quite honestly, in those days, it was unusual for women to come back to work. So unusual in fact that when I did return they wrote a two-page article about me in the BP Exploration News! I wanted to prove something to myself — that I could be successful and show that women could achieve their potential, and have families. If you get through the first few years, then it does get a little easier. I hope I am a good role model to other women because I believe one reason that women give up is because they don’t see enough role models at senior level.

Q: What advice would you give to young women interested in going far up the ladder?

Zuber: Leadership brings major challenges, and being absolutely certain that what you’re doing is meaningful provides great motivation to persevere.

Strank: Do what you are most passionate about. Do as many internships as you can, visit facilities, come to one of BP’s Discovery Days, make an effort to find out about the sector so that you can talk knowledgeably and passionately during an interview. If you really want to do it, don’t let anyone discourage you. Don’t worry too much about future jobs; the most important thing is to do your current job as well as you can, and there will always be the next job for you. It is important, though, to have a vision of where you want to end up.

Q: What do you consider your biggest accomplishment and why?

Zuber: My greatest accomplishment is teaming with my husband to raise our two boys, because, really, what could matter more? That said, I’m really proud of our scientific discoveries as well. Every now and then, I look at one of our planetary maps on the wall and say, “Sweet.”

Strank: Along with being a mother to two children, now in their mid 20s, I have had a rewarding, enjoyable, and challenging international career as a technology and business leader with BP. It is tough being a mother and managing a demanding international career. I feel I have helped prove that women can combine an exciting international career in science and business with family life. I hope I have been a good role model for others.

Zuber and Strank are two truly powerful role models for us all. They have reached the top through vision, determination, courage, and perseverance. They both followed their passion and were willing to fail in order to succeed in their careers. It is also interesting to note that both of them see their true success as a combination of professional achievements and family success. We thank them for sharing their wisdom and giving us a road map to reach that ambitious “C-suite.” ■■

Editor’s note: The statements and opinions in this article are solely those of the authors and do not represent in any way those of their employers.