CASE STUDY

Vinita Marwaha Madill

Space Engineering & STEM Outreach Consultant

How did you get to where you are now?

I'm fortunate to have known my passion from a young age and told my physics teacher in Year 7 that I wanted to work in NASA's Mission Control. Throughout my education, this drive was supported and 12 years later led me to fulfilling my dream, working on International Space Station operations at the German Aerospace Centre, Germany's answer to NASA's Mission Control and now at the European Space Agency (as a contractor through TERMA B.V.).

I found out about an organisation called SEDS (Students for the Exploration and Development of Space), specifically UKSEDS the UK chapter, while at university studying physics. Through this group I met space professionals for the first time, some of whom I actually went on to work with. Rather than involvement with space activities being a dream, suddenly it felt attainable.

I've taken small steps over the last decade and through secondary school beforehand to be able to work in the space industry. One of the largest steps was completing a nine-week course called the Space Studies Program at the International Space University. This was a life-changing experience for me with daily lectures given by astronauts and space industry experts. The course gave me an overall view of the international space industry and it was there that I decided that I wanted to work on human spaceflight operations, specifically related to spacewalks, and spacesuit design.

What challenges do you face on a day to day basis?

As a Space Operations Engineer I work on developing the operations for the project, including preparing a smaller version of Mission Control at European Space Agency's technology centre (ESTEC) in the Netherlands, and astronaut training. My typical day can vary from developing astronaut or cosmonaut spacewalk training with colleagues in Russia, to creating and testing missions for the astronauts to control the robotic arm at the European Space Agency.

Once the European Robotic Arm is launched I'll be working on-console at ESTEC and from Mission Control in Moscow on robotic arm operations and supporting the spacewalks conducted by the astronauts and

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cosmonauts onboard the ISS. I'm also the liaison contact within the European Robotic Arm project for our Russian colleagues. Collaborative teamwork is needed to solve the technical issues that might arise and having a good cultural understanding is crucial.

What is the biggest difference you noticed between work and university in terms of engineering?

At work, the space industry is inherently global in nature. One of my favourite things about working in the space industry, particularly in engineering, is that the environment is international. I enjoy being able to work with colleagues from all around the world designing future human spaceflight projects. We need this diversity and creativity to work out the really hard problems that we have in the world today.

Real life example of engineering applied to your work.

A good technical understanding with a solid foundation of maths and science is important to my work as a Space Operations Engineer. For me, learning fundamental physics and maths at university before applying that knowledge and science in an engineering capacity has helped a great deal. I use the skills that I gained through my space engineering degree on a daily basis, be it developing operational requirements for a new astronaut training tool or testing missions using a simulator that the cosmonauts will use to operate the European Robotic Arm onboard the International Space Station.

How do you approach these problems?

Alongside a good technical understanding, engineering is also a creative career. Problem-solving and lateral thinking are the skills that I use every day in my role. These are used to provide solutions to the technological challenges that we face today – from climate change to developing a spacesuit to explore the Moon.

What would your advice be to someone who aspires to be like you?

I think a lot of young people want to make a difference in the world and one of the best ways to do this is through a career in science and engineering. You can have an amazing impact through a career in engineering and the space industry in particular.

It's also important to enjoy the subjects that you study and the work that you're doing. So, I'd recommend that you really pay attention to what your passion is. I think almost everyone that I know working in the space industry and otherwise has felt like their future career was initially unknown. But pursuing your passion and persevering is important, whether you're able to do that in your main job or even as a side hustle or volunteering role.

Royal Academy of Engineering
Prince Philip House, 3 Carlton House Terrace, London SW1Y 5DG
Tel: +44 (0)20 7766 0600
www.raeng.org.uk
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