

Why I want to be a professional engineer

Gabrielle Hoffman

When I was young, I loved Future Problem Solving. It was the best class of the week because it wasn't just rote learning – we were given the chance to think entirely for ourselves and create our own solutions to problems. It was entirely based on our own motivation and our own ideas. When I was 11 years old, my FPS solution was a highly complex (and of course, incredibly unviable) method of organ transplantation that would be risk free for the recipient – even though I was too young to realise it wasn't quite how organ transplantation worked, I loved the opportunity to be able to solve problems under my own steam.

I have always been the sort of person who loves to solve problems. I'm never content with just knowing that something DOES work; I always have to know how (and preferably figure it out for myself). Because of this I often teach myself - I'm an avid reader and I love to research things beyond just what's taught in class – I don't think I could ever get enough knowledge to satisfy myself. In that respect, I've always been quite intuitive. I'm sure my teachers were annoyed with me always asking how or why. Growing up, I left a trail of dismembered gadgets in my wake – they hadn't survived my attempts to figure out their inner workings.

These days, I don't leave so much destruction in my wake; but the love of solving problems and working out how the world works has endured. During Year 13 careers seminars at school, I had a lot of trouble deciding what I want to do with my life. The careers computers were of no help, suggesting that a girl who loved science could perhaps be a "Fingernail technician" or a "Milk distributor". While these are both very valid jobs, they weren't quite what I was looking for. Simply being a girl who loved science set me apart from the rest – most of my friends planned to study Law, History, Classics and Philosophy. As a lawyer or administrator, plenty of jobs are open to you. But how many jobs were there out there for girls like me, who love science, problem solving, and an ever changing job?

Then in later 2008, I started talking to the older brother of a friend of mine, who has a Bachelor of Engineering in Chemical and Process Engineering. It sounded like the perfect job to do – the work was always different and changing, combined with my love of science and solving problems.

From thousands of years ago when *Homo habilis* and *Homo erectus* first walked the earth, engineers have been in demand. Who else would have the determination, foresight and intuition to sit down and figure out how to make rock tools? Who else would have thought to use sparks to create fire?

Engineering is arguably one of the oldest jobs in the world – always searching for ways to improve the world in which we live. Engineering made a lot of sense to me - my favourite subjects at school have always been science based.

In 2008 I studied Physics, Chemistry, Biology, Calculus and English, and loved them all. I took part eagerly in the local Science and Technology fair every year because it was so much fun – figuring out how to make everything work or make it better. One of my more ambitious projects involved light refraction principles in glass to produce invisibility. Starting my project, I didn't understand what I was working with. It was my love of

learning and knowledge that drove me to actually understand the underlying physical principles in my experiment. The actual invisibility part of the experiment is still a work indefinitely in progress. Looking back, engineering has always been the sort of thing I've been interested in. From my FPS adventures to one of the best classes I've ever had - building a small DC motor from scratch without instructions in Year 12 Physics. The teacher wanted us to figure out the principles ourselves, so that we could say it was completely our own work. My friends and I are always tinkering around with gadgets trying to figure out how we could improve them, or what we could add on to make them better. I always thought that this just meant I was curious, perhaps too curious for my own good, but in the end, it's the sort of thing that has shaped my career – Engineering has always been in my future, even when I didn't realize it myself.

I went to the Open Day at Canterbury and loved what I saw. The facilities were excellent, the lectures compelling and it felt like a place that I could thrive in. I'm aiming to do Chemical and Process Engineering because Chemistry has always been my favourite subject, and with the looming fuel crisis, the world is going to need lots of engineers - especially chemical engineers - to solve the problem. I love the idea of using engineering to make a difference in the world. A cousin of mine is currently discussing using his engineering degree to develop a new method for administering vaccinations – that's the sort of improvement I want to be a part of.

When people talk about changing the world, usually they mean through charity, or change in global state of mind. However, I would propose that another valid way to irrevocably change the world is via innovation in engineering. Karl Marx once said that "Philosophers have only interpreted the world in various ways, but the real task is to alter it," and Albert Einstein said that "Scientists investigate that which already is; Engineers create that which has never been,". The road to altering the world is a long one, and it's a road that I want to be on as a professional engineer.

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