

"Why I want to be a professional engineer"

Lucy Clinton-Baker

Imagine sustainable energy, clean water, a restored environment. Imagine dramatic space development and zero waste manufacturing. Imagine rapid elimination of diseases. Imagine unlocking so many opportunities for societies, individuals and for the planet. These are where I have imagined engineering is going to take me.

I've never had any engineers in my family. I never had an uncle that I used to build blocks with, or any radios that I wanted to take apart and fix again. It was my pure curiosity of how things worked that drove me towards wanting to be able to know why, and how I could change them or make them better. When I was 10 years old we had to make a device at school that could be dropped from the top of the playground with an egg in it and not break. Unfortunately, my egg broke. But afterwards I went home and spent the afternoon climbing up onto the roof and dropping new containers to see if I could make it better. By the end of the weekend I had an unbroken egg and what a feeling of accomplishment that was!

For so long I didn't know where my passion for science, maths, medicine, outdoors and people would take me. Then I realised that by becoming an engineer I would be able to apply the knowledge of maths and science to create something that would benefit society. I thought to myself, now you're heading in the right direction. But where do I want this to take me? Molecular nanotechnology. Combining physical principles demonstrated by chemistry and the molecular machinery of life with engineering principals found in modern factories. Now there was a goal I told myself I found the idea of being able to employ nanoscale processes to obtain chemical reactions in certain locations and then to use those reactions to assemble products fascinating.

At high school I had a lot of different pathways that I could have taken to university. English and journalism held my interest, but due to key teachers I had over my secondary education, I was inspired to pursue science based tertiary study. Though I think my background in literature is a key component for engineering and research, as I see creativity as a major necessity in unravelling tomorrow's mysteries. Becoming an engineer allows me to be creative in a practical way, rather than esoteric. After taking a tour around the University of Canterbury's engineering department and meeting the liaison officer, I was convinced about my study and excited to commence in 2007.

Chemical Engineering and nanotechnology cover such a broad spectrum and my interests within it, range from environmental to medical. Nanomedicine incorporates many of my passions and I would love to focus on the neurological side. I once read, imagine not imagining. This is hard to comprehend and I would love the chance to help people through medical engineering that might one day allow them to have dreams of their own and embark on their passion.

Balancing humankind's need for energy with the environmental cost to our planet is a major challenge and I see that nanotechnology will help fill our need for energy solutions and will help preserve the environment that is still pristine and may be able to restore damaged landscape that means so much to this country. This sort of environmental engineering and nanotechnology also fascinates me in the thought of what could be done in the future. I want to be involved in this forward thinking and cutting edge technology.

I see chemical engineering and nanotechnology as the industrial revolution of the 21st century and just as it would have been hard for the horse drawn era of the 19th century to imagine the technology we have today; it is hard for us to imagine all the possibilities that we

could have in the future. The thought of computers hundreds of years ago would have been laughed at, or you would have been banished for even suggesting it. Now you can have a computer the size of your palm and engineers work with nanotechnology to create things smaller than anyone could ever imagine, even modern day society struggle to comprehend what is happening in today's technology. I want to be able to take this technology that we have and the technology that is to come in the not so distant future, and make it useful to society.

As a woman going into a field which used to be male dominated, I feel it is important that woman stay involved in research and development in this country. New Zealand needs highly skilled, creative people and I want to contribute to that knowledge economy which is so important for our future. I also believe I have the skills to be a good engineer; to be able to communicate within a team or work independently, to be consistent, creative, to be able to take responsibility and, to have a dream.

I want to be an engineer because I want to have a vision. I want to be able to instil in others the hope and belief that things can be accomplished. I want to deliver results using the right tool depending on the situation and build and be part of a team that works to get real results and make changes for the better. I see that becoming an engineer would open many doors and lead to experiences that would help me improve in my knowledge, and as a person. The field of engineering excites me because it always remains in the development stage. There is always something new and it offers a life long career.

Imagination. That is what it comes down to. Many of the things that the future of engineering and nanotechnology talk about may never happen; of course they are just dreams at the moment. But to create or improve something someone must imagine, someone must dream and I want to be that someone. Engineering will take me there.