

women in
ENGINEERING@Malvern





Rowena Innocent

Engineering Director



Academic/Career History: I studied Physics with Astrophysics at Leicester University. During the summer holidays I joined an instrumentation company on a work placement to get some industrial experience and earn some cash to go travelling. After graduation I was offered a permanent position at the same company as a development scientist and ended up staying for 20 years! During that time I developed novel pressure sensing technologies for many applications including Aerospace, Subsea, Automotive and even Formula 1. Over the years I took on more responsibilities and pretty quickly realised that I really enjoy developing technical teams and business leadership.

What does your role involve? I have been at Malvern Instruments for nearly 3 years and lead the product development group. We are a global team spread across the UK, US and China creating new products for a wide variety of applications and markets. With many technologies in our portfolio there is a fascinating mix of engineering, science and application development that makes the role really exciting and rewarding.

What's your favourite part of the job? I get a real kick out of developing the team and individuals within it. I love creating a team strategy, driving change and seeing the results.

What's your proudest achievement to date? Every time we launch a new product or we receive good feedback from a customer I feel incredibly proud. In my early career achieving chartered engineer status was important to me and marked a point in my career when I felt I'd earned that recognition.

What advice would you give to females considering a career in engineering/science? There are so many different types of careers available in engineering and science it can be hard to decide which is right for you. Work experience, summer jobs and industrial placements are great ways to explore different technologies and working environments. Very few people have their careers mapped out and keeping an open mind to different careers will broaden the opportunities. Above all do something you really enjoy.

Katy Langley

Applications Development Scientist



Academic/Career History: I studied chemistry at Oxford, having taken chemistry, physics, maths, biology and history at A Level. I discovered that it was physical chemistry that interested me most, and chose to do my final year project working in a laser spectroscopy research group. I enjoyed working in the research environment so obtained funding to stay on and complete my doctorate in the same group, working on the development of spectroscopic techniques for the detection of trace gases. I was partly sponsored by industry, so I spent 9 months during my doctorate assisting a spin-off company in producing a prototype system using the technology we had developed in the lab, which we then tested and validated on breath samples from a range of subjects. I thoroughly enjoyed the instrument development process, taking the lab-based technology through to prototype stage, and so joining Malvern Instruments was an obvious choice for me on completing my doctorate.

What does your role involve? In a nutshell, I'm effectively the "voice of the customer" within the instrument development team. In practice, this involves investigating potential applications for the instruments we develop and identifying and developing desirable instrument functionality based on the applications the instrument could be used for.

What's your favourite part of the job? My favourite part of my job is that moment when you discover something new, be that about a particular instrument feature you are studying and developing or about a particular application you are investigating.

What's your proudest achievement to date? My career is still very much in its infancy so my "career-related achievements" are pretty thin on the ground and rather specific! However, I've really enjoyed discovering the extent to which parameters generated by an imaging instrument we are currently developing can be manipulated and used to elucidate important information about the various dispersion states of samples typically analysed by users

What advice would you give to females considering a career in engineering/science? Go for it! Don't worry if you don't know exactly what you want to do (I didn't!) - just follow your interests! With a science/engineering background you are very employable but far more importantly if you are doing something you enjoy it doesn't feel like work!

Margaret Dyson

Project Manager



Academic/Career History: I went to Loughborough University to study Mechanical Engineering which included a year in industry. I was sponsored by Rolls Royce and Associates who supply nuclear reactors for submarines. As part of this sponsorship I enrolled on the graduate training program, and having completed this I went to work as Quality Design Engineer. I also had an ongoing interest in the use of robotics in medicine and decide to change my career by doing a PhD in robotics in physiotherapy. After completing this, I work at Gyrus Medical, starting as an Electro Mechanical Engineer then a Senior Electro Mechanical Engineer. In 2004 I joined Malvern instruments as a Senior System Engineer first working on their Morphologic product. During my time at Malvern I had two children and have been able to balance my enthusiasm for engineering with having a young family by working part time.

What does your role involve? Project Management is a cross functional role ensuring the smooth introduction of a projects that can be delivered on time at an agreed budget. A lot of my work involves communicating with the technical team, manufacturing, purchase, sales/marketing etc. ensuring they have what is required to succeed, removing any issues they may have and developing project plan and budget which they can meet.

What's your favourite part of the job? Working with a team ensuring everyone knows what is going on and successfully delivering a product which people want to buy. There is nothing like getting in a new part in / or an instrument working when it started as a scribble on a piece of paper or a list of customer requirements.

What's your proudest achievement to date? The Sample Dispersion Units on the Malvern Morphologi product which I had significant design input into and met a difficult customer need.

What advice would you give to females considering a career in engineering/science? Engineering is a very board subject and involves applying science to the real world. If you like science / maths you are likely to find an engineer discipline that appears to you. If you enjoy working in a multi-disciplinary team, like to apply what you learn and enjoy having fun it may well be the option for you. When I first started my mechanical engineering degree in 1989 there were 4 women in 90 students - this is no longer the case. You will find a lot more women are doing engineering and the work place has a healthy balance of both men and women.



Paola Sesito

Systems Engineer for Imaging



Academic/Career History: I started my career in Italy, where I was born, with a degree in Physics and a Ph.D. in Astronomy. Then I worked for 3 years as a post-doc researcher (astronomy), before taking a break to complete a Masters in Management, Innovation and Service Engineering. The Masters included an internship period, and I spent it in a company developing high performance braking systems based on advanced materials. After that I moved to Spain (Madrid) where I worked during 3 years at the development of a space mission (in collaboration with the Russian federal space agency Roscosmos), combining academic research with industrial applications. And then came Malvern Instruments! I moved to the UK to join the company in September 2013 and I definitely switched to a job related to the industrial application of science.

What does your role involve? My role focuses on the development of new instruments for particle characterisation based on imaging technology. As a systems engineer I follow the process from the identification of customer requirements through the assessment of the concept, and testing of the system to optimise its characteristics and validate the capabilities. I am involved in design of experiments, laboratory work, analysis of the results through statistical techniques, and writing of documents and reports to support the product development.

What's your favourite part of the job? The best part for me is the interaction with my team. I really enjoy our meetings where we keep each other updated about compliance of tasks, and discuss new ideas. This is really useful also to reinforce the knowledge of products as a system, which is one of my favourite aspects too.

What's your proudest achievement to date? I can't deny that I am really proud of the around twenty scientific papers I published during my academic career. And of course I am really glad to have got a job in Malvern Instruments: this represents a big leap in my life (besides a big challenge) and allows me to employ my scientific skills in a "real application" world!.

What advice would you give to females considering a career in engineering/science? From my fist-hand experience I can surely say that a scientific or engineering career is hard. Nevertheless, girls who love science should follow their dreams and never feel defeated. They will want to try to find the best suited area of investigation to exploit their potential. And, please, find a good work-life balance: you will be happier and more productive in the long run.

Oksana Leszczyszyn

Applications Development Scientist



Academic/Career History: After my A Levels I decided that I wanted to study Chemistry in more depth, but I was also keen to understand how it could be applied, so within my degree took additional modules in Toxicology, Forensic Science, Microbiology and Pharmaceutical Science. What all these modules had in common were the use of analytical instrumentation to solve real problems and this theme has continued to feature in my career in various guises. In my PhD I moved away from pure Chemistry to study proteins. I continued my research career with a Postdoctoral Fellowship in which I was studying a pair of metalloproteins that are found in the nematode, *C. elegans*. After completing my fellowship, I decided that I wanted to experience life outside of academia and in 2011 joined Malvern Instruments as a Product Technical Specialist responsible for Bioseparations. This role was in the commercial area of the business, was customer-facing and involved travelling all over the world helping customers apply our instrumentation to solve scientific problems.

What does your role involve? Last year I made the transition from a commercial role to a more developmental role within NPI (New Product Introduction). In this role I can use my experiences as a User of analytical instrumentation and those of visiting customers to develop better, more intuitive and relevant products. My role is quite varied - which I enjoy - but is centred on making sure that our products meet the needs and expectations of our customers. This may involve anything from testing the performance of the instrumentation to developing new applications and methodologies.

What's your favourite part of the job? Definitely working in a team! We come from quite different backgrounds but everybody brings their individual expertise to the table and as a result, I learn something new every day...But a very close second is the challenge of working on a constantly evolving project.

What's your proudest achievement to date? Developing an algorithm that is implemented in Malvern's software.

What advice would you give to females considering a career in engineering/science? So many different types of jobs in science and engineering exist nowadays - and you owe it to yourself to find out what they are. Create opportunities to expose yourself to these jobs through work shadowing, work experiences, internships or year in industry placements...or talk to somebody in that role. There is no 'right way' of embarking on a career in engineering or science, but making/taking opportunities that make you stand out will at the very least help you to learn a bit more about yourself.



Carey Tews

Senior Software Engineer & Team Leader



Academic/Career History: I did Theatre Design and Production with a specialism in Stage Management at uni, oddly enough. I was just 16 when microcomputers started to be more available to the general public, so I didn't grow up with a computer. I sort of fell in to computing through a BASIC programming course at uni, which I loved.

I discovered that I had an aptitude for computers, and when it came time to leave uni and try to support myself as a Stage Manager, I found myself taking on jobs that featured computers. After a few years of this, I was hired as an IT user support person, and then was trained up as a programmer. I have worked full time as a software development engineer since 1989, and I have also had experience as a system administrator.

What does your role involve? I am the software lead in the Microviscometry group. That means I have responsibility for the day to day running of the team, making sure that the engineers have support, training and resources to do the job. Within the larger Software Team, I am a mentor and am involved in our software architecture working group, management of shared software components and am the lead admin for our development server.

What's your favourite part of the job? I need a top three, sorry! Writing software is like constantly solving puzzles, and I love that aspect of it. I also really enjoy working with other engineers as a mentor and consultant. Learning new things is also something I enjoy.

What's your proudest achievement to date? The first time I was asked to lead a software team.

What advice would you give to females considering a career in engineering/science? If you find that you have an aptitude for it, go for it.

Jo Wilkinson

Lean Sigma DfSS Black Belt



Academic/Career History: After A-levels I went straight into employment as a lab assistant in a firm of geologists. I then went on to work for Alliance Technical Products, a where I completed a HNC in Chemistry at UWE on day release. After a spell at Critchley Tech-Pro, I started working for Bohlin Instruments, a rheometer manufacturer, as the lab based Application Specialist. In 2004 Bohlin was acquired by Malvern and I have been here in a range of different roles from the application labs to development. My latest role is as the Black Belt for our Design For Six Sigma programme. This means that I spend most of my time supporting engineers through the programme, as well as training and facilitation. While at Malvern I completed a degree with the Open University, with modules covering maths to English to design, perfect for an enquiring mind - I usually tell people that I have a degree in 'stuff'. The Lean Sigma qualifications are part of an ongoing continuous improvement initiative we have within Malvern, but I'm quite pleased to be the first full time practitioner in the company!

What does your role involve? One of my main activities is supporting the NPI group through the training and project work needed to become competent in the tools and techniques learned in our DfSS course. The number of tools and techniques taught in the course probably numbers well into the fifties, so I discuss the progress people have made, suggest which tools they might want to consider for the next section of work and help them work through some of the trickier ones. Sometimes I run training courses in some of the lean techniques and I quite often facilitate meetings where some of the techniques are being utilised. When I have finished talking about everyone else's projects, I have my own to complete - the best projects are the ones that will make us more effective and efficient as a company.

What's your favourite part of the job? I think that must be the opportunities I have to make a positive impact on the way we do things across the department and across the company. I like to be involved in lots of things at once.

What's your proudest achievement to date? That has to be finishing my degree with the OU - it is really difficult to find the motivation to do a large amount of work *after* you have finished a hard day at work.

What advice would you give to females considering a career in engineering/science? Do it if it is what you love - set free your inner geek! Don't expect any of your relations to have even the smallest understanding of what you do for a living.



Katy Silence

Development Scientist - NanoSight



Academic/Career History: At school I studied a range of science, maths and technology based GCSE's and A-levels. After leaving school I studied for an HNC in Applied Biology whilst working in an analytical chemistry laboratory. I followed this with an Honours Degree in Biochemistry and Pharmacology and an MPhil in Structural Biochemistry at the University of Southampton. Following a year training to be a primary school teacher I realised that, lovely though a room of thirty 5 year olds is, my true interest lay along a more scientific path. Just over three years ago I applied for a job at NanoSight, and have been working here ever since, now as part of the Malvern family.

What does your role involve? It's a varied and interesting job and involves utilising a wide range of different skills. A typical project could involve anything from soldering and wiring to sourcing components, or I may be interacting with suppliers to optimise existing hardware designs or develop new parts. We generate a significant amount of data, so analytical and computer based skills also play a large role in day-to-day life. I frequently test new software developments and optimise and test various hardware configurations required to continuously improve existing Nanoparticle Tracking Analysis systems and to bring new, innovative products to the market.

What's your favourite part of the job? I love the excitement of scientific discovery. I still get that sense of excited anticipation awaiting a set of results which will tell you if all the careful planning and experimental configuration has paid off.

What's your proudest achievement to date? It's amazing when you see a scientific instrument you have been involved in designing, developing, testing and optimising being sold and used in the field. It makes all the hard work worthwhile.

What advice would you give to females considering a career in engineering/science? Go for it! If you have an inquisitive mind and enjoy a variety of different challenges then it's a rewarding and engaging career choice.