"I’m very proud of the fact that my work helps the general public and the NHS."

Ryan’s grandfather inspired him to follow a career in engineering and, after an apprenticeship as a trainee medical technical officer, he was offered a permanent role in clinical engineering.

Ryan Young

Deputy Radiotherapy Technical Services Manager

Employer or university
The Christie NHS Foundation Trust
Salary range
£40k-£50k
Portrait of Mr Ryan Young

How I got into the role

Expand / collapse

My grandfather was an engineering teacher and he inspired me to follow a career in electrical and electronic engineering. After taking A-levels in physics, chemistry and history I decided to look for an apprenticeship where I could study for a degree on a part-time basis.

I was really lucky to land an apprenticeship as a trainee medical technical officer at The Christie Specialist Cancer Centre in Manchester. I gained experience in ultrasound [1], clinical engineering and radiotherapy [2] before being offered a permanent role in clinical engineering.

It took four years to achieve a BEng in electrical and electronic engineering via Manchester Metropolitan University, which I did while working and passed with first class honours! My tuition fees were paid for by the NHS. I then moved into the radiotherapy [2]

department at The Christie where I worked my way up to my current role.

What I do

Expand / collapse

Working as a radiotherapy [2] engineer involves many disciplines including electrical, electronic and mechanical engineering, as well as physics, IT and even plumbing! Our primary responsibility is to maintain and repair our fleet of medical linear accelerators (LINACS), proton beam therapy cyclotron [3] and magnets, as well as CT scanners, CT simulators and brachytherapy [4] equipment.

The first hour of the day is usually spent warming up the LINACS and checking that they are fit for clinical use. This involves mechanical checks and measuring the radiation output of the machine using electrometers to confirm the energy is correct.

After that, my work can vary greatly. One minute I might be dealing with a fault for a PC mouse or keyboard and the next I could be called to deal with our multimillion pound linear accelerator which could involve tuning a beam of electrons travelling at the speed of light. Later on I might be called out to a water leak from a machine which requires some plumbing or I might have to replace a gear box that helps rotate a seven tonne LINAC [5] gantry.

In addition to routine maintenance and repair work we also take part in projects, procurement, installation and decommissioning. Our project work varies from innovative bespoke quality control devices to getting involved in major projects such as state of the art radiotherapy [2] machines (MR-LINAC [5]) and proton beam therapy. These last two projects are very exciting for The Christie and the UK as they will be one of the first of their kind in the country.

The best bits and challenges

Expand / collapse

There is never a dull moment in this job and each day can vary dramatically - you simply never know what the day will bring. The work is extremely interesting, varied and challenging. Working in radiotherapy [2] holds exciting prospects and you can get involved with groundbreaking new technology and treatment techniques.

I’m very proud of the fact that my work helps the general public and the NHS.

Life outside work

Expand / collapse

I'm an avid reader and am currently reading books relating to my other interests which are fell walking and history.

I'm an obsessive fan of my beloved Sheffield Wednesday FC of which I am a season ticket holder. I also love drinking tea!

Career plans and top tips for others

Expand / collapse

My long term goals are to achieve chartered engineer (CEng) status as this is the pinnacle of any engineer's career.

My main tip for others is to join a professional institute. I've been a member of the Institue of Physics and Engineering in Medicine (IPEM) for many years and contribute to the Engineering Advisory Group (EAG) and the Radiotherapy [2] Special Interest Group (RTSIG). I'd also recommend aiming for a Master's degree as this helps you to progress.

If you are passionate about making a difference to people's lives and are fascinated by science and technology, this would be a wonderful career choice.

Links
[1] https://www.healthcareers.nhs.uk/glossary#Ultrasound [2] https://www.healthcareers.nhs.uk/glossary#Radiotherapy [3] https://www.healthcareers.nhs.uk/glossary#Cyclotron [4] https://www.healthcareers.nhs.uk/glossary#Brachytherapy [5] https://www.healthcareers.nhs.uk/glossary#LINAC