

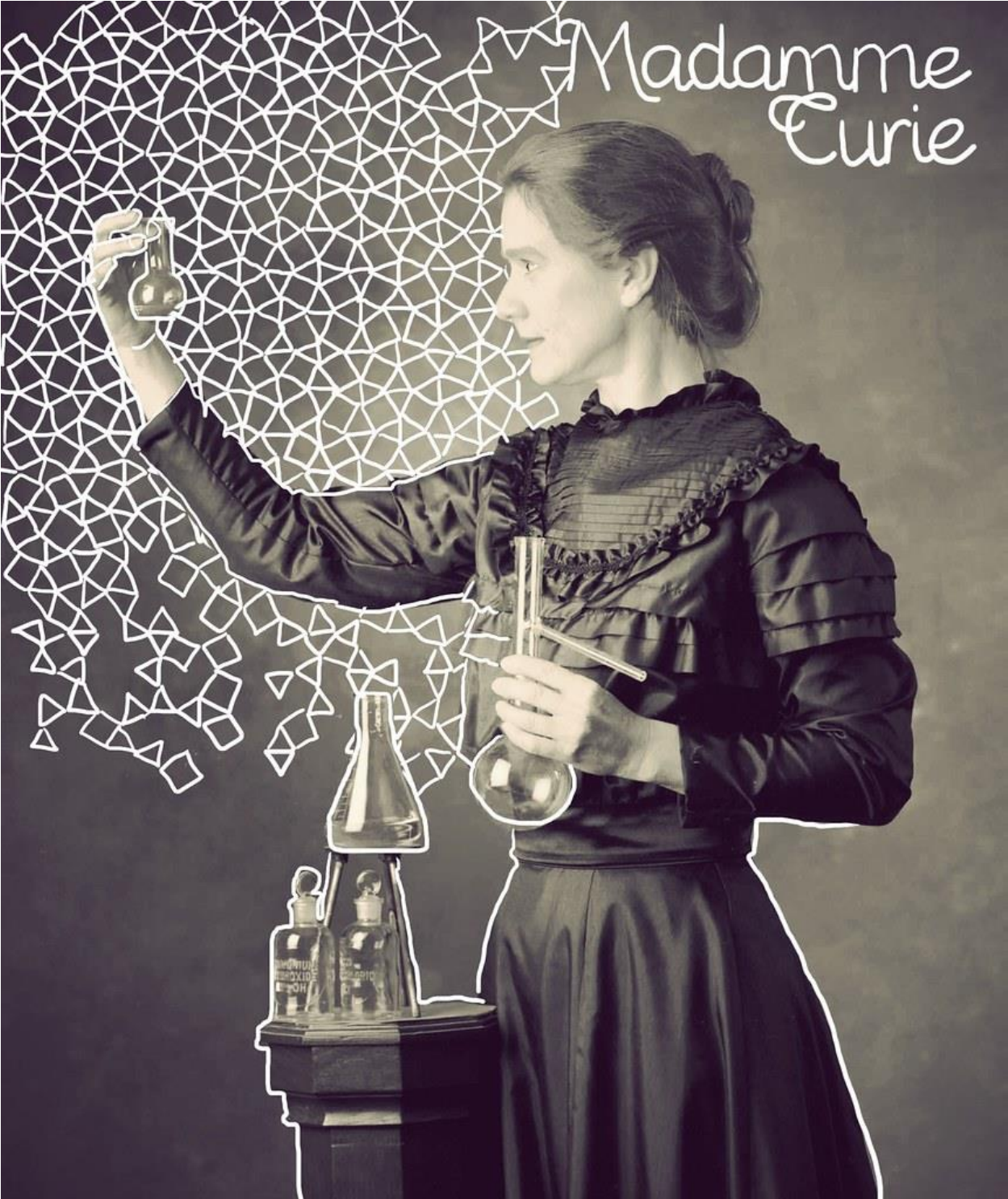


Fundamentally, STEM means Science, Technology, Engineering and Mathematics. Throughout the years, many people are encouraging women to choose STEM professions without thinking that it's mainly for men. Through history, women were believed to not be capable of doing duties. Even just recently, women weren't even allowed to vote or own property, they were plainly just expected to raise children and complete housework.

Just in the 1900s, the science field was largely dominated by males, with it being characterised as a "manly" profession. This was mainly due to many unequal beliefs from many years ago. This led to many people being against women doing it, also contributing to the lack of feminism in this field. Furthermore, this links to the saying, "you can't be what you can't see."



Marie Curie



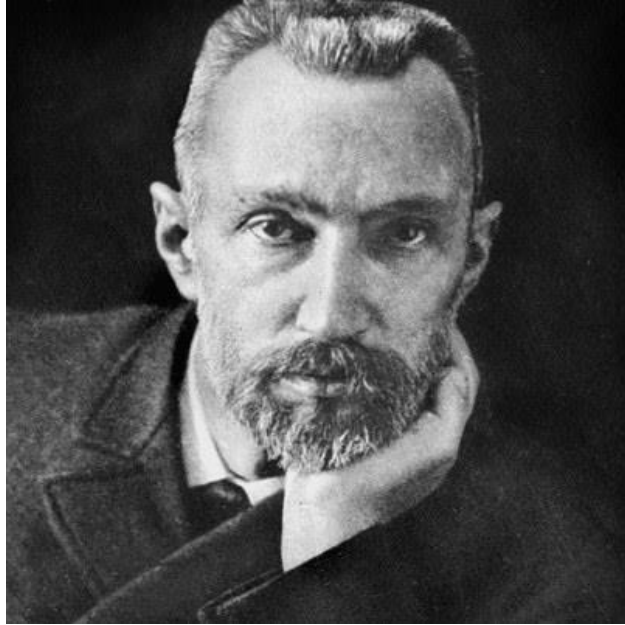


The world renowned Marie Curie, one of the greatest woman in this field, devoting practically her whole life to the research of humanity and specifically radiology. Whilst being widely known for her high accomplishments in the field of chemistry, she is also known for many other things, building her up to be recognised for her extent of revolutionising.



Firstly, Maria Sklodowska was born 7 November 1867 in the Russian occupied region of Poland, Warsaw. Throughout her education, she was a studious and yet brilliant student. Despite this, due to the low expectations for women, she was barred to seek further education.

Therefore, as an act of defiance, she enrolled in a floating university ( an institution giving clandestine education for the Polish youth). So through proceeding to save money whilst working as a governess and tutor, she was eventually able to travel to Paris to pursue further education at the phenomenal University of Sorbonne.



During her time there, she earned a degree in mathematics and a degree in physics. Whilst her time at the university, she was mainly dependant on bread and tea, causing her from time to time to faint due to her close starvation. Throughout her time in Paris, she met a physicist, Pierre Curie, who shared his lab, along with becoming her soon soulmate.

Although already finding the roots for success in France, she still longed to be back in Poland. Upon her return, she still found the difficulty in finding education. When coming back to Paris, she found her future husband waiting, and they waited no longer to marry each other. This resulted in them being a phenomenal duo in the field of science.



Though the future's revolutionary scientist was waiting, she still was inspired by many others. In 1896, Henri Becquerel discovered mysteriously spontaneous emitted radiation from Uranium, similar to x-ray like radiation, that could also interact photographic film.

Leaving with this new knowledge, she began to continue her research about this, finding out similar radiation with the element of Thorium. Moreover, she found out that the strength of radiation was dependant on the quantity of the element, not affected by the physical or chemical change of radiation.



This meant that the radiation was rooted by an important part in the element, within the atoms inside it. It was truly an incredible discovery which debunked the idea of atom models being shown as the atoms being intact objects. Therefore, in focusing on pitchblende (a super radioactive ore), they realised that it wasn't only the uranium causing this radiation alone, could there be something else?

During the year 1898, 2 new elements were reported, polonium and radium. Polonium is said to have been coined from Curie's home country, Poland. The word radium was taken from the latin word *ray*, which then led on to discover the word radioactivity during their research.



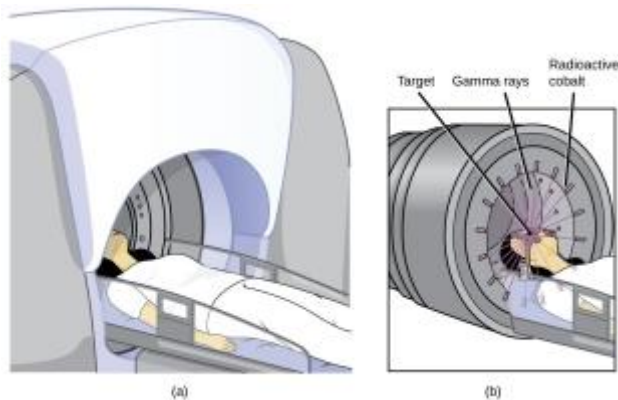
In 1902, she was able to extract 1/10 gram of pure radium chloride salt from many tons of pitchblende, which was known to be revolutionary at the time. Later during the year, Pierre Curie and Henri Becquerel were awarded the Nobel Prize in Physics, leaving Marie Curie overlooked for her contributions.

However, Pierre Curie supported her wife in taking a stand for her well-earned recognition, ending in a success with them all earning the Nobel prize in 1903 for physics, making her the 1st ever female Nobel Laureate. Fundamentally, the duo were phenomenal and well respected.



Unfortunately, in 1906, a tragedy was doomed to occur. With a horse-drawn cart and a busy intersection, Pierre Curie was left there crushed whilst simply trying to cross. Following the death of a phenomenal figure, Marie was there devastated from her loss, resulting her to be even more determined, engrossing herself in research, even taking over Pierre's role of teaching in Sorbonne, becoming the first female professor there.

Furthermore, her solo work was blooming, with another Nobel Prize for Chemistry being awarded, given for her earlier discovery of the 2 elements and her extraction of analysis of pure radium and the compounds of it. This leaves her to be the first woman (and until this date **only** woman) to receive two Nobel Prizes from two different categories of science.



Fundamentally, Marie Curie took no longer to take her revolutionised discoveries to work, changing the landscape of medical research and treatments. She then proceeded to open mobile radiology units during World War 1 and scrutinized the radiation effects on tumours.

However, some things may have a formidable cost, all of the research and radiation may have led to a high measure... Maria Sklodowska died 4 July 1934 (66), after bone marrow disease, leaving the world with a detrimental loss. It is widely believed that the cause of her bone marrow disease was a result of her overexposure to life-threatening amounts of radiation.



Due to this overwhelming radiation, just to take a view of the staggering figure's manuscripts, you must take radiation precautions, with it being contaminated with radium 226, with having a life of 1,600 years, you must ensure you are prepared for the exposure. As well as her coffin alone, being coated in a lead-lined seal, preventing the highly contaminated radiation from escaping, to take even further precautions.

## Ann Dowling



Dame Ann Patricia Dowling, a British mechanical engineer, renowned for her high research in combustion, acoustics vibrations, whilst primarily concentrating on efficient yet low-emission combustions and reduced vehicle and aircraft sound. Fundamentally, she is dubbed for her revolutionary finds in creating better mechanics following her research.



Firstly, Ann Dowling was educated in the Ursuline Convent School, Westgate, Kent, before eventually moving to the University of Cambridge as part of the Girton College. Studying in mathematics, she received an undergraduate level degree along with her academic divisions in energy, fluid mechanics and turbomachinery, following her summer job at the Royal Aircraft Establishment.

Not long after, she was awarded with a PhD degree during 1978, with her doctorate being aeroacoustics in concordeing problems of noise. Dowling predominantly did her research in Cambridge University, whilst also starting as a research fellow in 1977. Throughout her career, she has previously held visiting posts from Massachusetts Institute of Technology (MIT) and CIT.



During her career, her research based on fundamental understanding of the phenomenons issued with the problem, to furthermore create an even better outcome with the final results of the experiment. Fundamentally, Ann Dowling was also known as one of the four main panel chairs for Research Excellence Framework. On the 3rd February 2012, she was announced as the non-executive director for the oil company BP. This was an immediate effect, providing her with the position as announced. She was also elected as a non-executive board member of BIS since February 2014.





Although being gone many years ago, the heart of Marie Curie's research still remains to live on, with her leaving primary pathways to the future's discoveries, and opening door to advanced future finds, she has laid the cornerstone for oncology, technology, medicine and nuclear physics.

### Inspiring many



Although there are many many many more women choosing their passion for the STEM field rather than having to push boundaries just to seek their education, there are some clear changes for the good, going in the right direction for the future of humanity. It is important to understand that it isn't just a male dominated field, and women aren't just housekeeping maids as believed in the past. This is the future, the soon to be changed future.