



Mrs C Doherty

Helping to change the face of
Engineering

Derry girls in STEM: How one school is helping to change the face of engineering

Clare Doherty from St Mary's College in Derry looks back on the all-girls school's STEM promotion through Engineers Week and more. This year at St Mary's College in Derry, our [Engineers Week](#) events surpassed all expectations. We had approximately 1,000 primary school students, 1,500 secondary school students, 35 visiting engineers, 20 employers and five third level course providers join us for what has become an annual event at St Mary's College, and is looked forward to by both staff and students.

Engineers Week at St Mary's College shows our school working together with the wider business community and [Engineers Ireland](#). The week-long event captured the imagination and promoted STEM careers in a fun and engaging way to primary and secondary students and their parents in order to help increase the attractiveness of the engineering sector.

Our Engineers Week events featured on BBC Radio Ulster as well as in the local print press. We also promoted the event via social media as well as on our school website.

Local awareness

The inaugural Engineers Week at St Mary's College was in 2012 in response to the launch of the Northern Ireland Executive STEM strategy 2011, which recognised that "STEM enrolment was creating a potential shortfall in the supply of those with STEM qualifications at various levels required for the growth economy".

At St Mary's College we have many students talented in STEM subjects but local employers were concerned that they have STEM jobs that local people are not qualified to apply for. The ongoing need for the event was to achieve our key aim of giving students at our all-girls school the opportunity to make informed subject option choices that would allow them to access these wellpaid, readily available jobs both locally and further afield.

This is a careers growth sector where women are currently underrepresented. 'During the course of Engineers Week, over five years, there has been a definite change in attitude towards engineering from students who have attended the event'.

"There is no doubt that our **Engineers Week** focus greatly increased students', teachers' and parents' awareness of **STEM-related subjects** and **job opportunities.**"

Year 8 students are aware of the importance of STEM subjects and some of the many varied engineering careers. Key Stage 3 and 4 students are using their greater careers knowledge and input from local employers and partner organisations to make better-informed subject choices with a great awareness of the opportunities that STEM subjects offer.

Opportunity Knocks

Final-year students have accessed university places based on up-to-date knowledge gained from local employers during the Engineers Week Careers Fair. Employers are keen to engage

students at a young age and to change the attitude of young girls who in the past may have believed that engineering was a job 'for boys'. They have made their working environment open to our students and provide visits throughout the year as well as work experience, providing students with a valuable insight into the world of engineering. One employer stated that women account for 1pc of his workforce in Northern Ireland compared to 30pc in America.

During the course of Engineers Week, over five years, there has been a definite change in attitude towards engineering from students who have attended the event. Employers from throughout Northern Ireland and Donegal are very supportive of our event in the belief that, together with the education sector, they can change the face of engineering.

In recent years, we have welcomed back increasing numbers of past pupils who themselves attended Engineering Week events. They are now qualified engineers working in local companies. Students from earlier years are now in placement years or enrolled on engineering or STEM-related degree courses and apprenticeships. This is all so encouraging and positive.

Creating Role Models

We are very proud that our past student, Emma Smith, is featured alongside advanced manufacturing and engineering information in our local community plan. This shows our students that engineering careers are for women and for them.

Profiling past pupils who attended Engineers Week is central to the success of encouraging new students to follow in their footsteps. This year, we welcomed back two notable former students: Laura McElhinney, a final-year mechanical engineering student at Queen's University Belfast who was recognised as a [Female Undergraduate of the Year](#) finalist in 2018; and Lauren Harkin, who was crowned 2018 Apprentice of the Year at the Irish Print Awards.

Influencing the future

Richard Riley, the US secretary of education under president Bill Clinton, famously said: “We are currently preparing students for jobs that don’t exist ... using technologies that haven’t yet been invented ... in order to solve problems we don’t know are problems yet.”

It is estimated that 65pc of today’s students will end up in jobs that have not been invented yet. This is a startling figure and central to the sustainability of our yearly STEM Engineering Week focus.

Preparing students for the challenges of tomorrow is central to our thinking at St Mary’s College, Derry. The impact of Engineering Week is felt throughout the year in the classrooms and on the courses students are opting to study at GCSE, AS, A2, apprenticeship and degree level, as well as their future employment.

Locally, the focus on STEM in school aligns with the local Derry and Strabane Council and government strategy. The Derry and Strabane Community Plan 2017–2032 refers to engineering being a “significant employer in the region” and that “across the manufacturing and engineering sector the region is developing a world-class reputation”.

Ripple effects

The success of our Engineers Week event encouraged our Technology Department to also run an Entrepreneurial Week as part of Global Entrepreneurship Week annually in November, promoting entrepreneurship pathways to our students. We were delighted this was the springboard for our innovative and first-of-its-kind ‘Entrepreneur in Residence’ programme, launched in 2017 in collaboration with successful tech entrepreneur and angel investor [Mary McKenna](#).

The positive contribution of Engineers Week itself has also been recognised in two UK awards. In June 2018 we were finalists for the STEM Innovation category at the Community Education Awards and, in 2017, we travelled to the House of Lords in London as one of four finalists for the Inspirational STEM Engagement category at the STEM Inspiration Awards (BAE Systems was the eventual winner). The Inspirational Education of the Year Award in 2016 also recognised the work we have done during Engineers Week to inspire students into engineering.

Finally, local and social media interest in our Engineers Week programme has encouraged others involved in education both locally and further afield to contact our department looking for information and hoping to replicate the work ongoing at St Mary's College. To date, we have been contacted by those interested in the promotion of STEM and engineering from local schools, cross-border in Co Donegal and wider Northern Ireland and Republic of Ireland, as well as mainland UK.

“Our **advice** to those **wishing** to get **involved** is to **definitely get involved!**”

By Clare Doherty

Head of Technology and Design at St Mary's College, Derry



<https://www.siliconrepublic.com/innovation/st-marys-college-derry-engineers-week>

