It’s no secret that there’s a skills gap in engineering. This is attributable to a number of factors, namely, the way in which engineering is perceived by young people, accessibility and routes to entry, and also how well-resourced teachers are in the classroom and beyond.

The IET is taking a lead in addressing these issues through a number of programmes; from specially designed classroom challenges through to scholarships and bursaries for students and apprentices. Each of these have continued to attract significant support from industry, individuals and charitable organisations over the past year. I’m proud to say that we’ve seen significant year on year growth, which has enabled us to have a far greater impact in 2017.

This year, we were delighted to see more than 250 Diamond Jubilee Scholars graduate from their engineering courses – a fantastic achievement and tangible impact of the success of the programme. Another achievement of which I’m particularly proud is awarding 75 IET Engineering Horizons Bursaries to apprentices and degree students in need of that little extra support as they embark on their journey into engineering.

The scholarships and bursaries awarded to help talented individuals realise their engineering aspirations is just a part of the picture. Our education 5-19 schools programmes – Faraday Challenge Days and FIRST® LEGO® League – were made more widely available in the 2017/18 season thanks to significant funding from new and existing donors, including Airbus, Arconic Foundation, Motorola Solutions Foundation and the Jack Petchey Foundation.

We’ve strengthened existing partnerships and founded new ones, with a shared aim of encouraging more young people to study engineering and choose it as their profession. Support from individual members continues to buoy our activities, and we remain humbled that members like Mr Keith Thrower FIET are taking such an active and generous interest in the future of their profession.

Whilst 2017 was a huge success, there’s always more to be done, and in 2018 we’ll make a concerted effort to raise awareness of the fantastic and inspirational work that’s enabled by donations from the IET’s members. We know that many of our members share in our vision for the future and we’d like to invite them to become a part of the difference we make to the lives of future engineers, particularly as we lead up to the organisation’s 150th Anniversary in 2021.

Graeme Hobbs
IET Fundraising Cabinet Chair
2017 roundup

150
150 SCHOLARSHIPS AND BURSARIES WERE AWARDED IN 2017—UP 19% ON 2016.

25,000
OVER THE PAST THREE YEARS, SUPPORT FROM THE IET HAS ENABLED US TO REACH OVER 25,000 SCHOOLCHILDREN THROUGH STEM PROGRAMMES.

5,572
5,572 STUDENTS ENGAGED DURING OUR FIRST LEGO LEAGUE 2016/2017 SEASON.

150
SCHOLARSHIPS AND BURSARIES WERE AWARDED IN 2017—UP 19% ON 2016.

250+ FIRST GROUP OF OVER 250 DIAMOND JUBILEE SCHOLARS GRADUATE FROM THEIR ENGINEERING COURSES.

25,000 OVER THE PAST THREE YEARS, SUPPORT FROM THE IET HAS ENABLED US TO REACH OVER 25,000 SCHOOLCHILDREN THROUGH STEM PROGRAMMES.

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250+ FIRST GROUP OF OVER 250 DIAMOND JUBILEE SCHOLARS GRADUATE FROM THEIR ENGINEERING COURSES.

33% OF HORIZONS BURSARY WINNERS, AND ALMOST 50% OF DIAMOND JUBILEE SCHOLARS WERE WOMEN, PART OF OUR MISSION TO INCREASE DIVERSITY IN ENGINEERING.

1 IN 10 CURRENTLY 1 IN 10 OF THE ENGINEERING WORKFORCE ARE WOMEN.

80% APPLICATIONS FOR SCHOLARSHIPS AND BURSARIES ROSE BY ALMOST 80%, HIGHLIGHTING THE NEED FOR FURTHER FUNDS.

327 SCHOOLS PARTICIPATED IN IET FARADAY CHALLENGE DAYS IN THE 2016/2017 SEASON.

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# 2017

**Inspiring the engineers of tomorrow**

We’re dedicated to developing the engineering talent pool of tomorrow. In two major STEM activities we give school children first-hand experience of the creative and exciting world of engineering.

In IET Faraday Challenge Days, 12 and 13 year olds design and prototype solutions to tough engineering problems. And in FIRST® LEGO® League, a robotics-based challenge, 9-16 year olds develop key engineering and life skills.

Over the last three years we’ve reached more than 25,000 school children through these programmes.

## Impact of initiatives

### 2016/2017

**FIRST® LEGO® League season**

- **5,572** students engaged
- **609** teams registered
- **40** regional tournaments
- **49%** female attendance

**IET Faraday Challenge Days**

- **4,692** students engaged
- **327** schools reached
- **40** regional tournaments

---

"Airbus are proud to be supporting the IET Faraday Challenge Days over three years. We believe passionately in inspiring future engineers through STEM initiatives like this, and to be in a position to align ourselves with the excellent work taking place in schools local to our sites in the UK means our employees can contribute positively to the local communities where we’re based.”

**Donor**
In 2017 we placed students at the heart of the Landrover BAR British Americas Cup team. They were tasked with using sensor technology to keep the crew and vessel safe in racing conditions.

Students invented equipment to improve human performance such as heat regulators and fatigue monitors, boat performance and environmental performance in the form of moisture and wind measuring instruments. After designing and building their prototypes, teams presented their ideas to the judges, as well as their teachers and peers.

We deliver Faraday Challenge Days for free across the UK and have seen demand grow year on year. From just over 2,000 children in 2013 to 4,692 in 2017. We’re looking forward to reporting our highest participation ever at the end of the 2018 season.

After each season the Challenge is made available for all schools to use anywhere in the world as part of our IET Faraday resources. These events are of particular importance today, as they help to counter the pressure that engineering and Design and Technology subjects are under. The exciting and friendly format of each event demonstrates what a career in engineering has to offer, and provides a valuable insight to the children involved.

“Faraday Challenge Days invite teams of six 12-13 year olds to come up with ingenious yet practical solutions to real-life engineering challenges.

“Faraday Challenge Days

“I enjoyed how we were treated as professional engineers, I liked how you learnt lots of new things.”

Faraday Challenge Day student

“This challenge has given the students the chance to combine all of the STEM subjects in one day. It’s an opportunity that doesn’t come around very often.”

Faraday Challenge Day teacher
The global robotics competition, FIRST® LEGO® League, is a phenomenon the IET is proud to be part of. It attracts over 5,000 children aged 9-16 across the UK and shows no signs of slowing down.

The 12 week long competition draws on the skills of coding, research and presentation, bound together with core values of friendly competition.

As the UK and Ireland operational partner, the IET supports regional tournament organisers throughout the season in the run up to the nail-biting and adrenalin filled national final.

Competitors are in with a chance to win a place among the teams chosen to go to the global final, where they’ll have to work hard to overcome the challenges based around the annual theme.

2017 saw the introduction of FIRST® LEGO® League Junior programme for 6-9 year olds. It’s already grown, the 2018 season is made up of 22 events and 250 teams.

“I’ve taken part in other coding competitions but I liked this because I also learned a different skill. We had to do a presentation and it was a real-world problem.”

5,572

5,572 STUDENTS ENGAGED DURING OUR FIRST® LEGO® LEAGUE 2017 SEASON.
Supporting Student Engineers
With support from donors and the IET, we made 150 scholarship and bursary awards in 2017 – up 19% on 2016. Applications also rose by nearly 80%, showing the need for more funds to support passionate engineers.

Promoting diversity
We’re also doing everything in our power to promote diversity in engineering, in particular addressing the gender disparity that exists in the industry. Of the 150 recipients of our scholarships and bursaries in 2017, 40% of them were women, compared to 1 in 10 of the workforce in industry.

Diamond Jubilee Scholar Manoj receiving his award supported by Thales, at our prestigious ceremony held at IET London: Savoy Place
What made you go into engineering?

My grandfather was a civil engineer and my uncle was an electrical engineer, and we would discuss theory that I’d learned at school, it got me excited about engineering. In 6th form I was in the robotics society, we built a robot and did some of the programming, we went to compete in a competition and in doing this it became even more apparent to me that engineering would be the right profession for me.

How has the Diamond Jubilee Scholarship fund helped you through university?

I am pleased and relieved to have been awarded this scholarship because student finance is not enough and my parents still have to help with my living costs, as well as provide for my two brothers’ education. These funds help to relieve some financial stress and allow me to take up opportunities that can help my career that I would otherwise have been unable to do.

How has the engagement with BT helped so far?

I did my internship last summer and it was the best work experience so far – the most I have learned and the closest experience I have to working in a real working environment, a real eye-opener to see practical engineering. I also had a fantastic opportunity to make a speech alongside BT CEO Gavin Patterson when he formally opened the Tommy Flowers room at the IET. It was great to see that both he and other senior people within BT care about their business growing, investing in the next generation through this programme and engaging with the students BT support.
Tell us a little about your mentoring relationship with Daniel
Although I’m three times as old as Daniel, we quickly found that our shared passion for engineering enabled us to establish a good rapport. We’ve used some simple tools to establish goals for the mentoring relationship, and to address specific areas such as public speaking where Daniel felt he could use some advice.

I hope I’ve helped Daniel look beyond his immediate goals to thinking about longer term opportunities in engineering, especially in new and emerging technologies that will offer exciting challenges and fulfilment in the future. I look forward to my regular contacts with him, and I’m very happy that the bursary scheme has given me the opportunity to pass on my knowledge and experience to a new generation.

How was the experience for you, Daniel?
Having a mentor has significantly helped me with my personal development, and has motivated me to push myself, in order to maximise my opportunities within my career. Paul has a wealth of knowledge and experience within engineering, which is both useful and inspiring, and he provides unbiased advice which has allowed me to look further than my current role, within my apprenticeship, and start developing ambitious goals that focus on my career within the engineering industry.

“Paul has a wealth of knowledge and experience within engineering, which is both useful and inspiring”
Part-time work in a local engineering company first sparked my interest in engineering. However, it was my apprenticeship at PA Consulting Group that highlighted my passion for electronic engineering. Through my apprenticeship, I achieved a Distinction in my HNC in Electrical and Electronic Engineering and I also gained my NVQ Level 3 in Electrical and Electronic Engineering. I used to work part-time up to 25 hours a week, during evenings and weekends to support myself while studying. Living on campus is not an option for personal reasons, so this bursary has helped with the travel costs to university. It has also allowed me to reduce my working hours and focus more of my time and energy on achieving a high-class degree.

Emily Ellwood
IET Engineering Horizons Bursary
Queen Mary University London

“This bursary has helped with travel costs and allowed me to reduce my working hours and focus on achieving a high-class degree.”
The future looks bright

For the IET, the start of another year brings an opportunity for us to reach new heights and change more lives, 2018 is no exception.

Looking ahead

- The plan for IET Education 5-19 during 2018 is to continue to grow all our IET STEM initiatives, providing more opportunities to inspire and offer up-to-date career guidance to more young people. This will be done with a particular focus on three areas; primary schools, ‘hard to reach’ schools and parents.

- Grow the Junior FIRST® LEGO® League Expo

- Increase the number of scholarships and bursaries awarded

- Inspire donations and legacies from members and fellows by raising awareness of the impact they could have

“My career in engineering has spanned over forty enjoyable years. I believe passionately in the benefits that engineering brings to society. This was why I was proud to donate to the IET to help in their work to inspire school children to become our future engineers. I believe we must get their interest when they are young and I encourage other IET members to support these fantastic programmes.”

Keith Thrower OBE, FREng, FIET
We couldn’t deliver our inspirational range of activities without the kind support of our partners. We’d like to take this opportunity to express our most sincere thanks to everyone who has contributed.

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<th>Our donors</th>
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<th>Where does the money go?</th>
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<tr>
<td><strong>Diamond Jubilee Scholarships</strong> (including Harold Firmin legacy – from which scholarships and bursaries may be awarded) (£664,105)</td>
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<tr>
<td><strong>Engineering Horizons Bursaries</strong> (£170,043)</td>
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<tr>
<td><strong>Faraday Challenge Days</strong> (£187,301)</td>
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<tr>
<td><strong>FIRST® LEGO® League</strong> (£25,751)</td>
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<tr>
<td><strong>Other income – various restrictions (e.g. education, awards, conferences)</strong> (£12,500)</td>
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<td><strong>Unrestricted income (including Take Your Place)</strong> (£16,145)</td>
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<td><strong>Total £1,075,845</strong></td>
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How our donations work

At the IET we put every single penny to good use, which means that each donation truly makes a difference. We’re grateful to all the individuals, companies, trusts and legacies who make all the work we do possible.

See how you can support us

Our amazing donors

Corporate giving

Individual donations

Trusts & foundations

Leaving a legacy

Fund our work

Scholarships

Bursaries

FIRST® LEGO® League

IET Faraday Challenge Days

To achieve...

1. Increase the number of Engineers & Technicians into the workplace

2. Address the skills gap in Science, Technology, Engineering & Mathematics
How you can support us

If you’re passionate about the future of engineering, contact the IET Fundraising Team to find out how you can help make a difference:

- [w] theiet.org/impact
- [e] fundraising@theiet.org
- [t] +44 (0)1438 767253