



Minister announces major investment in doctoral training and Quantum Technologies research at York

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The University of York is to benefit from investment in science and engineering research totalling £204 million announced by Science minister Jo Johnson today.

It is one of 40 UK universities which will share in £167 million support for doctoral training over a two year period, and £37 million for UK Quantum Technologies research which includes the York-led Quantum Communications Hub.

The funds for doctoral training will come from the Engineering and Physical Sciences Research Council (EPSRC) which has changed how funding is allocated through its Doctoral Training Partnerships (DTPs).

Universities & Science Minister Jo Johnson: "We are committed to securing the UK's position as a world leader in science and innovation. Supporting the vital work of the York-led Quantum Communications Hub, which is developing technology to deliver quantum encryption systems to enable secure transactions and transmissions of data across a range of users in real-world applications, along with other leading research at York is key to this.

"The £4.1 million of funding for the University of York will enable it to support more Doctoral students across the Hub and in its other leading research activities, generating new discoveries and commercial partnerships, boosting high level skills and supporting jobs and growth."

The DTP funds will support students for the academic years beginning October 2016 and 2017 in all areas of EPSRC's research activities. The changes will give institutions greater certainty and increased time to plan their DTP programmes.

The Quantum Communications Hub led by the University of York will also receive £2 million to extend the quantum network it is already building in and between Bristol and Cambridge, to BT's research base at Adastral Park, in Martlesham Heath, near Ipswich. Adastral Park is home to a major cluster of ICT companies as well as outstanding BT research facilities.

Connection of the site will enable new and direct collaborations between companies in the cluster and the Hub partners, accelerating collaborative innovation. It will also make possible network demonstrations of quantum technologies in the outstanding BT Showcase facilities, as well as trial quantum communication services for early adopters in the company cluster.

The Dean of the Faculty of Sciences at York, Professor Brian Fulton, said: "The major increase in the York DTP reflects the increasing success of York researchers in winning funding from EPSRC for our research. The students will benefit from training within internationally leading research groups, and from the support in professional and employment skills provided through our newly established Graduate Research School.

"York is pleased to be at the forefront of helping EPSRC deliver on the training of the next generation of researchers and in the development of the next generation of technologies. The additional



investment of £2 million from the QT strategic capital provides new world class facilities for the York-led QT Hub."

Professor Tim Spiller, of York's Department of Physics, who leads the Quantum Communications Hub, added: "This QT capital award will enable an important addition to the UK Quantum Network (UKQN) that we are establishing in the Quantum Communications Hub. This extension will connect BT's Adastral Park site, including the cluster of major telecommunications companies, to the UKQN at Cambridge, enabling the Hub to explore a range of new applications for quantum communications, in direct engagement with end users. The addition will also enhance our R&D on quantum communications in a network setting, contributing towards the standards that are required for the commercialisation of these new technologies."

EPSRC's Chief Executive, Professor Philip Nelson, said: "This year we are allocating £167 million to universities via Doctoral Training Partnerships (DTPs). These will cover a two year period and give institutions greater certainty and increased time to plan their DTP programmes, and support excellent doctoral students.

"In addition, we are investing in training and providing capital for research to ensure that the National Quantum Technologies Programme can make the most of the country's research talents. These strategic investments will help science push at the boundaries and make discoveries that are taken through into innovations."

Further information:

- **Doctoral Training Partnerships**

This year 40 universities will benefit from the Doctoral Training Partnership funding, which ranges from £489,000 to nearly £ 18.5 million. The DTPs are awarded to universities for the provision of doctoral study and are allocated on the basis of EPSRC research grant income, and fellowships. They were previously known as Doctoral Training Grants.

The flexibility of the DTP allows universities to leverage funds, for example from industry, and potentially support higher numbers of students. Previous use of DTP has resulted in award-winning research papers that have sparked further investment in research from industrial partners and other international funding bodies.

The grants allow institutions to be flexible in terms of student recruitment and retention, and enable them to vary the length of support (between three and four years) dependent on the project.

- **Quantum Technologies Investments**

The new Training and Skills Hubs Quantum Systems Engineering will be nodes within the national network of Quantum Technology Hubs and deliver a package of skills training, co-working and mobility, and career development initiatives to develop high-level skills in quantum engineering.

- **The Strategic Capital investment** will contribute to the aims of the UK's National Quantum Technology strategy by adding to and expanding the UK's quantum technology capability. The York-led Quantum Communications Hub is aiming for breakthroughs that will lead to widespread and affordable use of the technology. These include: chip-scale integration based on Quantum Key



Distribution (QKD), thus reducing the size and manufacturing costs of equipment; building a UK Quantum network for the demonstration and testing of new equipment and services - providing early access to advanced technologies for industry, business clusters and communities of users.

The Hub partnership includes leading researchers from the universities of Bristol, Cambridge, Heriot-Watt, Leeds, Royal Holloway, Sheffield, Strathclyde and York, collaborating with world-class researchers working in the labs of industrial partners.

Several companies and organisations, including BT, Toshiba and the National Physical Laboratory, are also involved the Hub.

- **The Engineering and Physical Sciences Research Council (EPSRC)**

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