

# SUPPORTING TECHNOLOGICAL INNOVATION IN BRITISH INDUSTRY



Nigel Williams  
Secretary of the Royal Commission  
for the Exhibition of 1851

**The Royal Commission for the Exhibition of 1851 has operated at the intersection of industry and design for well over a century and a half. Established by Queen Victoria in 1850, the Commission's initial remit was to organise the Exhibition of the Works of Industry of All Nations; now better known as the Great Exhibition of 1851.**

The Exhibition was the world's first international trade fair, assembling 100,000 exhibits in the iconic Crystal Palace and attracting over 6 million visitors – equivalent to a third of the population of Britain at the time. The Exhibition was a tremendous success, but exposure to international competition proved something of a rude awakening for the British manufacturing industry. We were upstaged by the French in terms of design flair, the Germans in terms of precision engineering, and the Americans in terms of large-scale manufacturing. Prince Albert, the Commission's first

President, was determined to do something about it.

When the Exhibition closed in October 1851, the Royal Commission was therefore established as a permanent body, tasked with managing the substantial profits to increase the

Kensington for the twin purpose of enlightenment and education. The Royal Albert Hall, Royal Colleges of Art and Music, Imperial College London, the V&A, the Natural History and the Science Museum all arose as a result of the Commission's early work, helping to inspire people

*... twin purpose of enlightenment and education ...*

means of industrial education and extend the influence of science and art upon productive industry.

Among the Commission's first acts was setting up the great cultural estate in South

from across the UK and boosting the country's productivity.

At the same time, the Commissioners were also determined to fulfil the other part of Albert's vision, helping



THE GREAT INDUSTRIAL EXHIBITION OF 1851.

Plate I. - The Interior.

fund access to a world-leading education for people across the empire of the time as well as the manufacturing centres of the North. This vision was realised in 1891 with the foundation of our science scholarships, aimed at encouraging bright, early-career scientists to continue with their research.

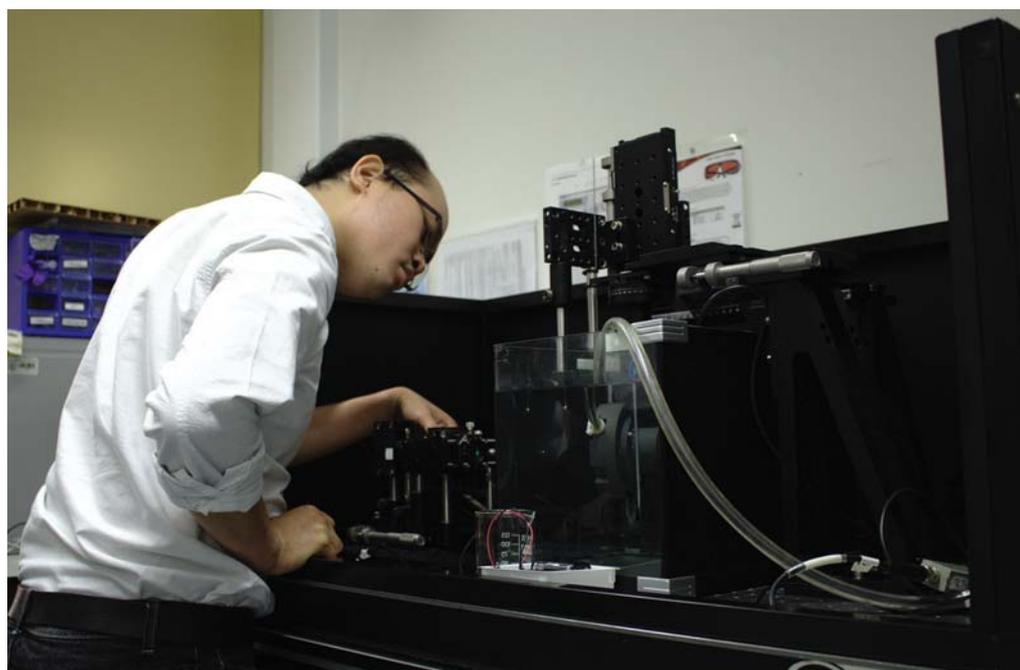
*... twelve Nobel laureates have since received early career funding ...*

The scholarships are still going strong over a century later, and have a long and illustrious list of recipients. Among the first beneficiaries of the programme was Ernest Rutherford, a young physicist from New Zealand who came to Cambridge in 1895 and whose pioneering research on the structure of matter would eventually win him the Nobel Prize for Chemistry. A total of twelve Nobel laureates have since received early career funding from the 1851 Commission scholarships, including Paul Dirac and Peter Higgs.

By the 1980s, an important priority for the Commissioners was to help businesses understand and harness the power of technology. A common complaint we were hearing from industry at the time was that although they could see the importance of investing in technology research, most did not have the resources to devote to it.

It was to help overcome these challenges that we set up the Industrial Fellowships, a scheme which allows businesses to team up with a university to conduct doctoral-level research over three years with the aim of

producing a patented product or industrial process. With a financial value of up to £80,000 a year, the Commission pays half the Fellow's salary as well as their university fees for the duration of the programme. There is also a generous annual travel allowance.



Shuning Bian

The Industrial Fellowships have already had a tremendous impact, giving businesses across all sectors the opportunity to support their brightest employees and explore the benefits of technological innovation. The importance of such a programme has been made clear by the range of companies where Fellowships have been awarded – ranging from such industrial giants as Rolls Royce, BP and BAE, to start-ups and SMEs on the brink of success.

Our 2014 Fellows, publicly announced in October last year,

cover an exceptionally broad spectrum from aerospace engine design to improved drug delivery mechanisms, by way of social media analysis and chemical engineering techniques. The Commission takes a very broad view of what constitutes 'productive industry'.

One of the most remarkable Fellows is Shuning Bian, a graduate of the University of

We are always eager to receive applications from new universities, companies and areas of research, and have continued to expand the scope of the programme year on year. Applications for our 2015 Fellowships are currently being considered; they will open again in October for 2016.

Whether in medicine or aerospace, energy or consumer

Sydney currently completing his PhD at Oxford. In his role at Lein Applied Diagnostics, he is working to speed up the development of 'microbubble' drug delivery by improving the techniques currently used to

technology, the 1851 Royal Commission aims to continue the legacy of the Great Exhibition by making a difference to the UK's manufacturing capacity. Our Industrial Fellowships have

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model its impact. Motivated by his personal experience of chemotherapy in 2006 for treatment of leukaemia, Bian's Industrial Fellowship project will facilitate the development of a wide variety of new medical procedures.

proven a highly successful way of encouraging industry to look ahead, investing in ideas today that will turn into the technologies of tomorrow.