

Breaking new ground in translation

The Royal Society Entrepreneur in Residence scheme

THE
ROYAL
SOCIETY

Since 2017, the Royal Society has awarded 81 Entrepreneurs in Residence to support academic staff and students in delivering greater translational impact from their research.

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Introduction

The Royal Society Entrepreneur in Residence scheme is an innovative approach to collaboration at the industry-academia boundary.



Image: Sir Adrian Smith, President of the Royal Society.

Collaboration between industrial and academic science is an essential driver of scientific progress. The rewards of such partnerships are seen not only in advances in cutting-edge research but also in economic growth and social impact.

Since 2017, the Royal Society Entrepreneur in Residence (EiR) scheme has sought to bridge the gap between industrial and academic science by placing individuals with experience of research in industry or entrepreneurship into academic settings for one day per week.

In a relatively short period of time, the EiR scheme has proven its ability to generate large and measurable benefits to all parties. Staff and students at universities are equipped with the skills and knowledge to translate their research, while grant holders have the personally rewarding experience of passing on knowledge acquired during long and often varied careers. The advantages are seen in long-term benefits for the institution, as well as for local and national industry networks.

One of the great strengths of the scheme is its flexibility – there is no typical successful applicant and no typical set of projects that a grant holder might pursue. This booklet aims to summarise some of the activities undertaken within the scheme and encourage applications from individuals with the skills and desire to support academic staff and students.

Further information about the scheme, including details on how to apply and guidance for potential host institutions can be found on the Royal Society website.

Initiatives like the Royal Society's Entrepreneur in Residence scheme are vitally important to the UK's scientific endeavour and its ability to translate the outstanding fundamental research carried out in UK universities into impact in the world. I am delighted to see the outcomes that these exceptional entrepreneurs and industrial scientists have delivered in a short period of time.

Sir Adrian Smith, President of the Royal Society

Entrepreneurs in Residence at a glance

To date, there have been 81 Entrepreneurs in Residence based at 39 different institutions across the United Kingdom. The scheme currently offers funding for up to three years. A full list of the award holders is available on the Royal Society website.

EiRs are placed at a diverse range of universities and research institutions across the United Kingdom noted in Figure 1.

Successful applicants are often highly experienced industrial scientists. However, the scheme continues to attract individuals from a range of sectors. The experiences of successful applicants to the scheme are summarised in Figure 2.

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“Having spent much of my career at the intersection of academia and industry, I was able to advise students on how to think commercially about their research and what value they could create by starting their own company.”

Dr Peter Mountney, Former EiR,
University College London

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Above: Entrepreneurs in Residence at the Royal Society.

FIGURE 1

Awards are spread across the UK with many organisations opting to host multiple EiRs.

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On average, 16 awards have been made each year since 2017.
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Although based with a single host, EiRs often work collaboratively across departments, schools, and universities.
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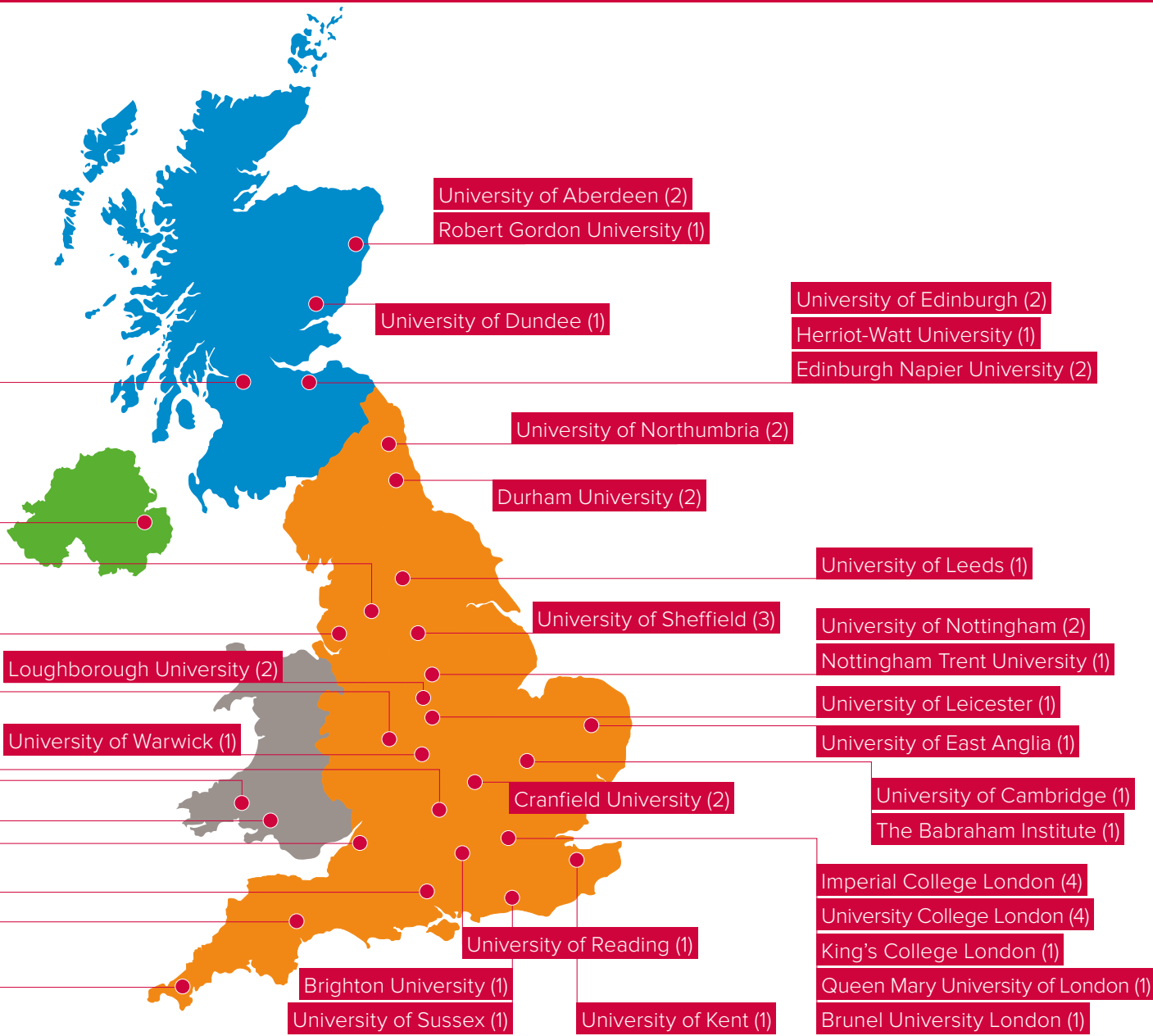
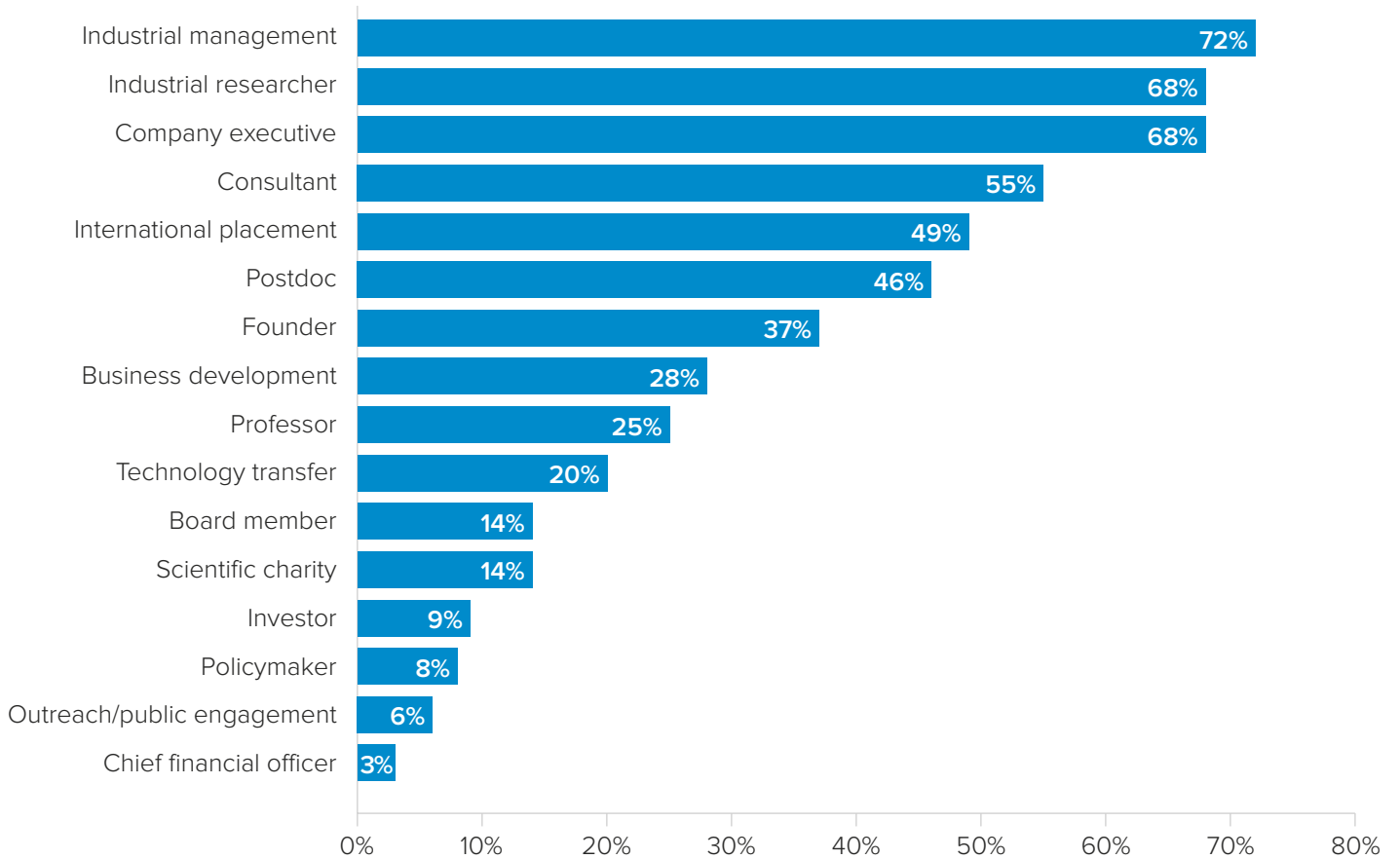


FIGURE 2

EiR cohorts 1 – 3: Percentage with various industrial and academic experiences.



Case studies

Helping to launch companies

EiRs can fill a vital bridging role, providing the practical expertise and support that is required to unlock and commercialise promising academic research.

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“Starting a new venture can be a daunting prospect; there are so many unknowns, and it feels like stepping into unfamiliar territory and trying to navigate the right path. It can feel overwhelming and even a little scary but getting the right support structure around you from the start will provide you with that foundation and set you on the right path.”

Dr Caroline Barelle,
EiR, Queen’s
University Belfast.

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Dr Peter Mountney was an EiR at the University College London (UCL) when he met the founders of Rahko. At the time, two of the founders were PhD students working in the exciting field of quantum computing and artificial intelligence. They were being courted by several large corporations, but they were keen to explore starting their own company.

Dr Mountney was able to advise on subjects such as protecting and managing IP, how to identify the commercial opportunities arising from research and how to pitch complex scientific concepts to potential investors. He says that “it was clear from the beginning that this was a group of extremely talented, highly driven individuals with a unique set of skills. They had great ingredients for a startup and thanks to the Royal Society EiR scheme, I was embedded in the university to support them at this formative time”.

They went on to raise seed investment and win the ‘Hottest Quantum Startup’ at the Europas Tech Startup Awards 2020, and have worked with Microsoft, IBM and AWS before being acquired by Odyssey Therapeutics in Jan 2022.

Sphera, Durham University’s first student spinout, was formed in 2019 by three PhD students. The construction materials company is producing revolutionary products: the first carbon neutral and carbon negative blockwork. This was in part made possible by the advice and support of Dr David King, Entrepreneur in Residence in the Department of Chemistry.

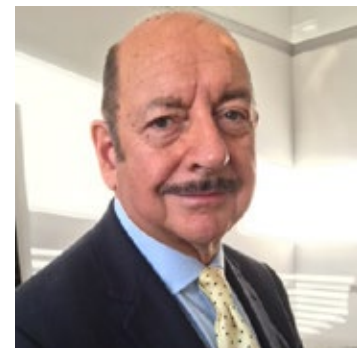
Dr Natasha Boulding, CEO at Sphera, says that Dr King was “instrumental” in the formation of Sphera. The idea for the company came about when a group of students at the EPSRC Centre for Doctoral Training in Soft Matter for Formulation and Industrial Innovation (SOFI CDT) were set the task of solving an industrial challenge.

Dr King judged the results of the project and suggested that they take the idea further. He was subsequently able to offer wide-ranging advice to the founders on the processes behind the formation of a business. Dr Boulding says that for Sphera one of the most valuable aspects of this coaching was gaining confidence: “We learnt that starting a company is not something that only other people can do, you can do it too”. Sphera and Rahko are two of many ventures that have found support from a Royal Society EiR.

Dr Caroline Barelle is Entrepreneur in Residence at Queen’s University Belfast and CEO of Elasmogen, a successful company that she spun out from the University of Aberdeen.

She knows first-hand the challenges that come with spinout formation, from practical concerns such as financing and IP to developing the confidence that is required to take on the challenging role of CEO. She says that these experiences make her well placed to provide support to individuals hoping to commercialise their research.

So far, she has undertaken activities such as meeting one-to-one with new spinouts “to provide commercial support, a sounding board for ideas and importantly just to listen when someone needs to share concerns or is feeling out of their depth”. She now plans to expand her activities to assist early career scientists with identifying commercial potential in their research.



“It has been a pleasure working with Sphera from the beginning of their adventure. I am very proud of the commitments and drive shown during the past three years from conception to the expansion of additional production facilities.”

Dr David King (above),
former EiR,
Durham University.

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Developing incubators and accelerators

University incubators and accelerators provide fantastic opportunities for academic staff, students, and graduates to turn their ideas into reality.

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“Adrian’s contribution has helped disparate communities to interact, in difficult circumstances; provided a valuable intermediation and translation service, especially supporting our Digital Accelerator to online success; and also maintained the purpose and objectives of moving the commercial innovation agenda forward during uncertain and challenging times.”

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Dr Lynn Oxborrow,
Nottingham Business
School

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Individuals can get 1:1 business advice from experienced mentors and use the working and meeting spaces to develop their concepts into successful enterprises.

A CEO who has been involved in five university spinout ventures; Dr Charles King, EiR at Oxford Brookes University between 2018 and 2021, was ideally suited to help set up the ICE Qube incubator at the University. He notes the value of such a space, saying that “there are significant benefits in providing a physical space for like-minded entrepreneurs in universities to gather, exchange stories of their journeys and occasionally find someone to join their enterprise”. There are also wider benefits for the university and its culture when startups and spinouts are given the opportunity to flourish. Dr King says “there are significant benefits in giving research staff and their students the freedom to explore commercial avenues to their research. This freedom should be encouraged wherever possible and not feared”.

While an incubator is able to nurture businesses emerging from within a university, a university-based accelerator can bring in others from the local area. Adrian Rowland, EiR at Nottingham Trent University (NTU), supported the launch of the university’s digital accelerator with exactly this aim in mind. The accelerator selected seven local companies to be involved with the project, including a spinout from NTU itself. Adrian was able to use his expertise as a strategy and innovation specialist to help these local businesses identify opportunities for partnership with the university. He hopes that the benefits to NTU and to the local economy will persist, and that long-standing relationships and clear routes to the commercialisation of academic research will be formed in the process.

One example of a company supported by the digital accelerator was Weather Logistics, founded by Dr Chris Nankervis. Weather Logistics aims to provide an accurate daily weather forecast with a range of three or more months, as opposed to the 10-day detailed forecast generally available.

Such a prediction is invaluable to businesses in multiple sectors and will only become more relevant with the prospect of increased volatility in weather trends due to climate change. Dr Nankervis says that the accelerator has allowed the company to develop commercially: “Up to this point we were focused on developing our technology, rather than how we could evolve as a business to meet the needs of each sector. The accelerator has helped us generate a clear list of business development actions, including exploring partnerships as the most effective route to market.”



Above: Dr Charles King (third from right), former EIR at Oxford Brookes University.

Frameworks to support innovation

A robust system for translation within an academic institution or department is crucial in maximising the potential for innovation.

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“The scheme has been transformational. The network that Nessa has established continues to grow organically. She has given us key infrastructure and has trained the TRO staff to identify gaps in translational programmes, helping us to give targeted support. The network that Nessa has created will remain the legacy of the ‘Royal Society’s expert in residence’ network at Oxford, having far reaching impacts long term.”

Sarah Wagstaffe,
Head of the TRO,
Oxford Medical
Sciences Division

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Providing academic scientists with clear avenues for commercialising their research smooths the often difficult path to translation. Two Entrepreneurs in Residence who have implemented creative solutions at their host institutions are Dr Nessa Carey and Dr Chris Finnis.

Dr Nessa Carey, working in collaboration with the Translational Research Office (TRO) at the University of Oxford’s Medical Sciences Division, has been instrumental in establishing an ‘experts in residence’ network. These experts are senior individuals with world-leading knowledge of their sector, for example drug discovery, digital health, medical devices or diagnostics. There are now 26 individuals in this network who have been able to provide support to 99 entrepreneurial researchers based within the division and to start-ups for local incubators. They have been involved in wider activities promoting a culture of entrepreneurialism, such as serving on internal translational funding panels and collaborating in the creation of training materials, courses, webinars and project specific ‘surgery sessions’.

As well as the ‘experts in residence’ network, Dr Carey has worked to improve the exchange of knowledge and ideas between the Medical Sciences Division and other departments and divisions across the University. This is vital, she notes, because innovations that improve human health come from across scientific disciplines.

At the Universities of Nottingham and Leicester, Dr Chris Finnis developed a system to evaluate early-stage commercial ideas in the academic sector and clarify options for their commercialisation. This system provides an ‘Innovation Profile’ for each idea, addressing critical questions around the technology, target market, organisation, and resources. It relies on core academic skills, commonly used to develop technical ideas during routine research projects, and applies them to new areas for commercialisation, which are sometimes less familiar to academic scientists. This approach is tailored for the academic sector and has already been used by Dr Finnis to coach several university start-ups, including Myconeos, a company with university IP on innovative fungal strain technology.

A clear benefit of this approach is that it empowers academic researchers to judge the viability of their own concepts, therefore reducing reliance on university technology transfer departments. This embeds commercialisation know-how within departments or institutions for long term use after each EiR project is completed.



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“I’ve had a wide-ranging life in academia, and from start-ups to multinational companies. This has been incredibly useful in supporting innovators at Oxford, as I can bridge the different communities and help them understand each other better. I’m very proud that we are creating a network that will continue to drive capability and culture change after my time as an EiR is over.”

Dr Nessa Carey (right), EiR,
University of Oxford

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Entrepreneurship and business training

A key barrier to translation of academic science is the differing skill sets required for industry and university-based careers.

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“Academic researchers are often unaware that they use an entrepreneurial mindset to progress their university careers. The masterclasses [that I ran] demonstrated this important point and also the additional skills, professional expertise and processes required to succeed in industry and as a business founder.”

Lucinda Bruce-Gardyne (right), former EIR, University of Edinburgh

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A researcher may possess the scientific knowledge to develop an idea and realise the potential for commercialisation, but the competencies required to put this into practice are various and often unexpected. With their knowledge of the industry science – and often with personal experience of moving from academia to industry – EIRs are well placed to educate university staff and students on the skills required for commercialisation.



Lucinda Bruce-Gardyne drew on her experience as the founder of Genius Foods to organise and deliver a series of Entrepreneurial Masterclasses at the School of Physics and Astronomy. She summarises her aims when planning the series: “...to share my own experience of setting up and growing a business and also involve a range of professional experts to share their perspective of what is required to successfully scale a new venture. I hoped this would provide attendees with a depth of advice I would have found invaluable when starting my company.”

The sessions brought together influential entrepreneurs, lawyers, investors, grant providers and accountants to offer a well-rounded view on starting a business. Attendees learned valuable skills and forged relationships with key stakeholders from across different sectors. Lucinda was “delighted with Edinburgh University’s interest in the Masterclass series” she says that the project led to “a number of individuals requesting regular separate mentoring sessions to discuss their ideas and approach to engaging with industry and starting their own business”.

At the University of Southampton, EiR James Otter developed a commercial literacy programme to prepare academic scientists for the shift to running their own company or a career in industry. James was able to draw upon the community of EiRs based at the University at the time (Dr Adam Hill, Virginia Hodge, Dr Duncan Holmes), and Dr Peter Hotten, based at the University of Swansea. The course initially consisted of eight sessions covering topics including introductions to finance, company boards and intellectual property as well as negotiation skills, working with lawyers, and how to market and fund a business concept effectively.

The commercial literacy framework was later used by the Royal Society to provide virtual sessions to their Industry College during 2020. This project enlisted further EiRs, Dr Adrian Burden, Lucinda Bruce-Gardyne, and Dr Nessa Carey, who provided additional material. The EiRs led the 90-minute sessions and provided expert advice as well as ‘mini-cases’, genuine examples from the real world. The virtual format allowed attendees to network with scientists from around the country and enabled more participants to join the sessions than the traditional face-to-face format would have allowed.

James Otter and Dr Peter Hotten believe that these sessions satisfy an urgent need among the scientific community for an introduction to practical business skills and commercial concepts in an easily available and condensed format. They are now commercialising the concept through Commlit.online Ltd.

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“Working with James and the other Royal Society Entrepreneurs in Residence was hugely educational and great fun. Their enthusiasm and no-nonsense approach made the small group sessions very engaging for all. The online version of the course reached not only a larger, but a much wider audience, including undergraduates, postgraduates, administrators, senior professors and researchers as far afield as China and Ghana.”

Dr Alex Mant, University of Southampton

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Preparing students and early-career researchers for careers in industry

There is now a track record of EiRs providing innovative solutions to preparing students to work in industry.



“I wanted to create a programme that could both inspire and equip other people for non-traditional careers in engineering and specifically in enterprise.”

Jessica Leigh Jones MBE (above), EiR, University of Wales Trinity St David

For many students, academic careers are the most obvious and visible and the presence of an EiR provides an opportunity to learn more about the wide range of career paths available in industry. Alternatively, an EiR may work to build the skills that industry employers most want to see or those necessary for entrepreneurship.

Based at the University of Wales Trinity St David (UWTSD), Jessica Leigh Jones MBE is using her experience of the manufacturing industry to develop an Enterprising Engineers Pathway. With a career that has included both manufacturing engineering and a focus on workplace culture and employability, Jessica Leigh Jones was well-placed to develop such a course. This course will provide a route from post-16 education that builds technical and entrepreneurial skills in tandem, particularly within manufacturing. The culmination of the training is a four-year degree apprenticeship in Engineering Entrepreneurship. Jessica says that “training a new generation of innovators will benefit both the individuals involved and the wider landscape of manufacturing within Wales”.

The unique degree apprenticeship will allow students to gain experience of intrapreneurship which Jessica sees as an essential attribute for manufacturers to adapt to new challenges. The shared apprenticeship model of the course means that students rotate between different, non-competing organisations. This benefits the students by allowing them to build up a range of skills across different sectors and stages of the supply chain and workplace cultures, and leads to transfer of best practice between businesses. At the end of the rotations, the companies compete to employ apprentices which has the effect of driving up wages across the local area.

Students with an awareness of industry and a desire to work within it may not be aware of the specific skills and behaviours required to be successful in applications. At the University of East Anglia, EiR Professor David Dent assisted with the establishment of an Industry Employment Board to address issues surrounding graduate employability.

Bringing in partners from local industry, Professor Dent and the board were able to make suggestions for adaptations to the curriculum to improve employability. He says that “while it is important to demonstrate academic ability employers also seek individuals who have explored a range of opportunities and interests while at university, those who are passionate, committed and want to make a difference”. Moreover, editing the Science Faculty student employability handbook gave him the opportunity to emphasise the expectations of employers and the behaviours necessary in a professional business environment.

Dr Duncan Holmes has used his time as EiR at the University of Southampton (UoS) to develop a seminar series on engaging with the pharmaceutical industry and an introduction to drug discovery, open to both early-career researchers and medical students. This then led to 1:1 discussions with researchers and students either wanting to work with, or have a career within, industry. He is able to advise on career paths, applications and specific requirements for



roles – an incredible opportunity for those at an early stage to draw on expertise gained through a 30-year career in the pharmaceutical industry. As well as this, Dr Holmes worked with the UoS Research and Innovation Services and the Post-Doctoral Association (Medicine) to initiate an Enterprise Club for the Faculty of Medicine. This provided a forum for communicating commercial expertise and navigating the early translational pathway with researchers.

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“As an entrepreneur I seek to empower individuals with the sense that ‘anything is achievable’ with a vision, commitment, energy, and a sense of self-worth. No employer can resist an individual who understands their own capabilities, is prepared to learn from experience, to gain new skills and wants to make a difference.”

Professor David Dent (left), former EiR, University of East Anglia

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Hackathons and industry challenges

EiRs can use their knowledge of broad industrial challenges and networks to address real world problems.



“By engaging with the academic scientists in Physics & Astronomy, and the wider community, I have opened their eyes to the value of their skills within the third sector and the impact they achieve by supporting socially beneficial projects.”

Dr Adam Hill (above), former EiR, University of Southampton

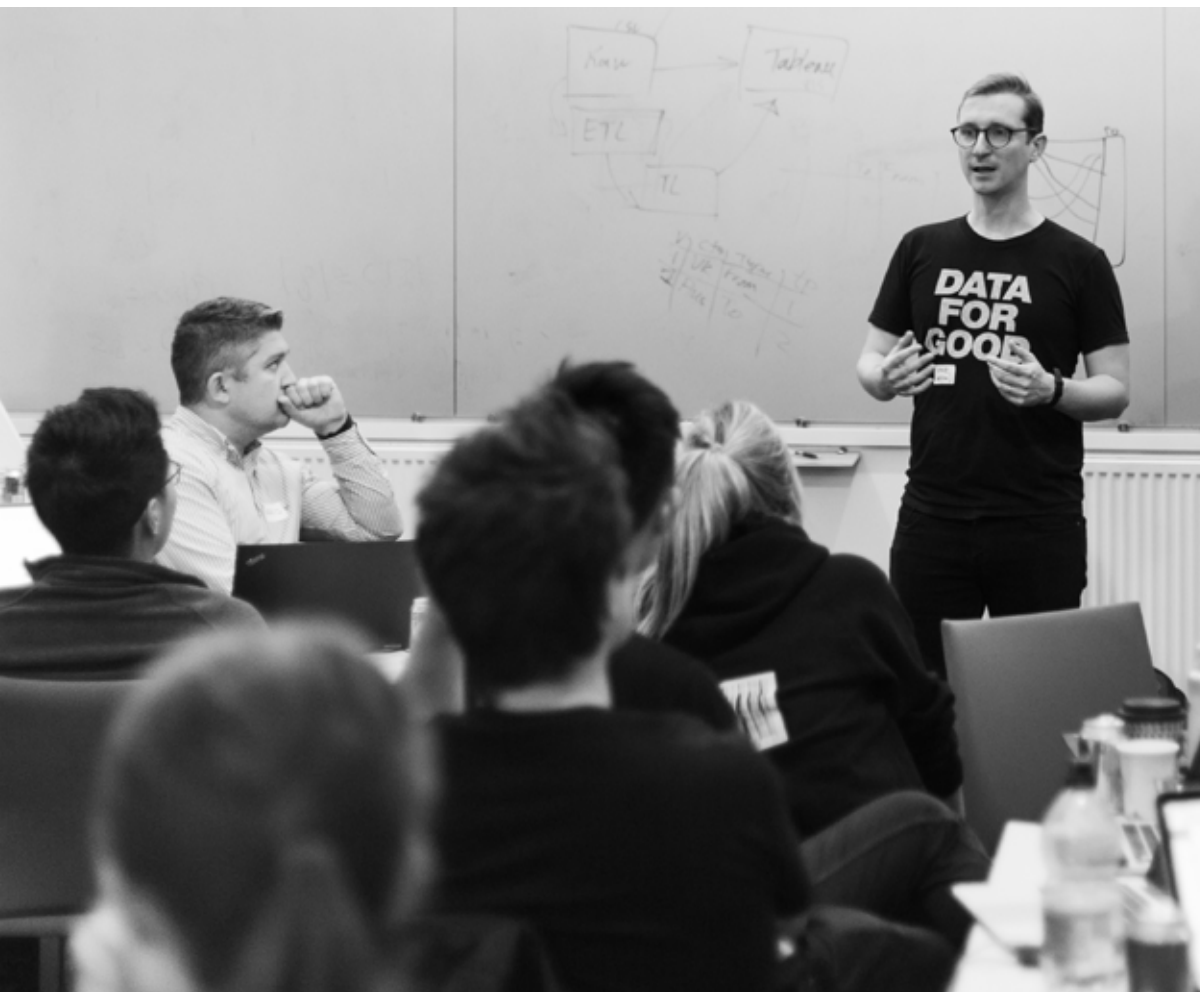
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Dr Adam Hill was an EiR at the University of Southampton when he organised the University’s first data science-based hackathon known as a ‘DataDive’ for the charity DataKind. The event brought together internal and external data scientists to work towards social impact projects in support of two charities – Shelter and Parkinson’s UK. The following year a second DataDive was held, supporting Meningitis Now and Stop the Traffik. Such events can be exciting ways to engage the University community in working towards a common goal, whilst generating significant and long-term benefit for the relevant charities.

Giselle Cory, Executive Director of DataKind UK notes the role that an EiR can play, “Adam has leveraged his relationships with DataKind UK, and the University of Southampton, so that charities have access to the best data science skill and the University’s community is able to contribute its unique skills to the social sector”.

With their extensive networks of contacts, EiRs can bring together members of the wider scientific community. The DataDive led to the formation of Southampton’s Data4Good team, which has provided training and networking opportunities for members of the Department of Physics and Astronomy.

Dr Hill acknowledges the widespread support that the project has gained from across the university, “The enthusiasm for the DataDives that have been hosted and attended by the Southampton academic research community demonstrates that the appetite for the ongoing support of these activities will prosper long after my time as an EiR comes to an end”.



Left: Participants at the 2019 University of Southampton DataDive.

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“Providing students with structured co-curricular programmes where they tackle real world challenges and learn new practical and professional skills has a transformative effect – giving them confidence to lead new initiatives, explore different career areas and develop their entrepreneurial capabilities.”

Dr Ceri Batchelder,
former EiR, University
of Sheffield

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As part of her EiR role, Dr Ceri Batchelder co-founded a make-a-thon where students have the opportunity to develop hardware and software solutions for individuals with disabilities. The event, *Hackaccessible* has garnered significant media and university attention, providing students with valuable experiences of inclusive design while developing ideas with genuine potential for societal impact. There are now plans to expand the project into a worldwide initiative, welcoming students from around the globe to participate.

Working with the Sheffield Engineering Leadership Academy (SELA), Dr Batchelder has also been involved in the development of overarching themes for second year student projects. These are based around how digital technology might benefit organisations such as an SME manufacturer, the NHS, a food co-operative and an educational charity in the Sheffield City Region. Themes have included the Internet of Things, Big Data and AI & Machine Learning. Furthermore, individual student projects have achieved regional impact with short-listing in the Sheffield Digital Awards, and the scheme as a whole resulted in a Highly Commended application in the National Enterprise Educators Awards.



Above: Dr Ceri Batchelder in conversation with SELA student engineers.



Above: Dr Ceri Batchelder with SELA student engineers.

Introducing staff and students to industrial insights

Award holders pass on their knowledge of cutting-edge technology used in industry to ensure research is prepared for translation.



“My EiR role has allowed me to mentor the leaders of new UK startups on how to best deliver competitive advantage to their industry clients and position their quantum technology products for future disruptive business applications in finance, transport and security.”

Dr Roberto Desimone
(above), former EiR,
University of Bristol

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At the University of Bristol, Dr Roberto Desimone used his EiR placement to pass on knowledge from his extensive industrial career in emerging technology innovation, including artificial intelligence, machine learning and quantum computing. Through lectures, tutorials, and innovation workshops, he was able to help staff and students understand how to exploit their deep knowledge in quantum technologies for a wide range of industrial and business applications, especially on topics such as quantum systems engineering and the use of quantum computing algorithms for optimisation. He also mentored more than 30 PhD students at the university’s Centre for Doctoral Training in Quantum Engineering and more than 20 entrepreneurial fellows within the Quantum Technology Enterprise Centre, helping them explore new startup business ventures and other collaborative projects with industry.

Dr Desimone’s experience in the field of quantum computing is a prime example of how the EiR scheme can facilitate the communication of industry science to academia. While academic research is generally accessible through journals and publications, the same is not always true for commercial science – in part due to concerns around intellectual property and licensing. An EiR can use their considerable expertise to pass on this industrial knowledge, enabling new partnerships/ventures as well as advances in both academic and industrial research.

Dr Danuta Mossakowska, EiR at the Babraham Institute in Cambridge, notes that it is often seemingly small details that can make the difference to academic scientists looking to translate their work. Her expertise, gathered over 30 years as a leader in the pharmaceutical industry, has enabled her to advise on common pitfalls that researchers might fall into when commercialising their research.

Holding a seminar on the subject of these pitfalls, Dr Mossakowska was able to save valuable research time by demonstrating the stringent regulatory requirements that must be met in the pharmaceutical industry. For example, she provided guidance to a team to ensure that reagents such as cell lines they purchased now for research would not hinder future commercialisation. She acknowledges a noticeably distinct culture in industrial science and says that “previous experience has helped me to provide guidance to researchers on how to present ideas to commercial partners, giving a more targeted communication approach.



Above: Dr Danuta Mossakowska.

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“Roberto has helped to steer the evolution of our quantum innovation activities with an invaluable industry perspective. His network and broad understanding of quantum technologies have helped to ensure that our new Quantum Technologies Innovation Centre satisfies the needs of the broadest range of stakeholders.”

Mike Patton, General Manager, Engine Shed, University of Bristol

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Connecting staff and students to industry contacts

Entrepreneurs in Residence can leverage their extensive networks to connect researchers to industrial scientists.



Above: Dr Richard Seabrook, EiR, University of Bristol.

Dr Richard Seabrook is an EiR at the University of Bristol, working within the Faculties of Health and Life Sciences. He has numerous links to industry and funding agencies – in part due to the role he held as Head of Business Development at the Wellcome Trust until 2017. During his time as an EiR he hopes to accelerate the translation of research in the life sciences to real world benefit, in particular the development of the local life science business ecosystem.

“We have successfully influenced the local industry strategy to better recognise life science industry locally and catalysed the formation of business networks to bring the business, clinical and academic communities closer together” said Dr Seabrook. “In addition we are driving convergence between deep tech and life sciences for new industrially relevant in silico tools”. Dr Seabrook’s work with his colleagues in Bristol has attracted interest from US venture capitalists and has been recognised globally as a centre of excellence for vaccine surveillance.

Connections that link academic scientists to their industry counterparts are essential for translation of research. However, the differences in working culture and concerns from industry around IP and information sharing can sometimes make it challenging to initiate and sustain constructive relationships. The EiR can act as a bridge between them. Often the networks grown during an EiR placement can be long-lasting and help to strengthen the entrepreneurial ecosystem of an entire city or region.

Dr Callum Norrie, EiR at the University of Edinburgh (UoE) and Heriott-Watt University has used his network to encourage alliances between industry and university scientists. As an expert in the space sector, he has utilised his EiR placement to integrate collaborators and spinout teams that he has coached with industry and external agencies. He has achieved this through various projects including forming a group of individuals at UoE with expertise spanning academic and commercial interests.

He has now taken this work forward by helping to establish a new space science conference series: Space, Satellites + Sustainability (SPIE), which brings together experts from government as well as industry and academic science.

Dr Norrie has been instrumental in helping to form connections between Edinburgh's universities and the Dundee satellite station (DSS), assisting with the establishment of the Heriott-Watt ground station. This has helped to form a connection between the station and the University of Edinburgh to prepare an archive to be used as a scientific and entrepreneurial resource. He observes the success of his activities in "the higher profile that space research now has at the University [of Edinburgh] – it is now a strategic long term research theme". He also notes an increase in commercial activity at the university.

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“Callum Norrie’s years of expertise and experience in the space science sector have been instrumental in the transition of the Dundee Satellite Receiving Station into the commercial realm as the Dundee Satellite Station Ltd. from engaging in discussion with DSS Ltd. team and NASA personnel to negotiating with funders, his advice has been concise and useful at every turn. This is an outstanding example of the Royal Society’s usefulness to advanced technical businesses as well as academia.”

Dr Gary McKay, Research Fellow,
University of Dundee

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Creating national and regional networks for innovation

One of the major advantages of the Entrepreneur in Residence scheme for the individuals involved is that they span and can connect numerous different networks.



Above: Dr Cristina Sargent, EiR, Imperial College London.

The Royal Society Industry College is one example of such a group. Spanning institutions, regions, and scientific disciplines, the College incorporates current and former EiRs as well as current and past recipients of the Royal Society's Industry Fellowship. Being a part of this community provides opportunities for networking and collaboration. For example, members often participate in the Royal Society's Industry Programme by playing key roles in the Royal Society *Transforming our future* conference series or joining committees that govern the Society's work.

EiRs have also formed their own groups amongst the cohorts. The Women's EiR Group was introduced by Dr Nessa Carey and Dr Cristina Sargent. Dr Carey highlighted that their aim was to improve the diversity of the scheme, in particular reaching out to women and encouraging them not to 'deselect' themselves. She added that "it has been great having a friendly forum where we can share experiences and offer each other practical support with projects".

As the scheme continues to prove successful and rewarding to host institutions, there are now several examples of universities taking on multiple EiRs in successive cohorts. This provides the opportunity for long-term projects and cross-disciplinary cooperation. The University of Southampton has so far hosted six EiRs who have collaborated on various projects such as the commercial literacy workshops and the Summer Student Innovation Challenge. The latter involved Dr Duncan Holmes and Dr Virginia Hodge assisting on a university project which involved students developing business plans and solving industry challenges, with the EiRs providing a joint seminar on soft skills for collaboration.

Another example is the cluster of EiRs that has formed at the University of Sheffield. Following Dr Ceri Batchelder in the first cohort of grant holders, Dr Michael Murray and Professor Keith Jackson were based at the University in the second and third cohorts respectively. As part of his project, Professor Jackson organised 8-week modules in Enterprise and

Entrepreneurship which Dr Batchelder and Dr Murray were able to assist on, providing examples and anecdotes that contextualised the session content. Professor Jackson emphasised the value of collaboration: “Other EiRs, startup businesses and patent lawyers contributed to the sessions to give their perspectives and to create a vibrant dynamic in the workshops. Including other Sheffield EiRs was especially appreciated by the attendees”.

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“I have been fortunate to work with a number of excellent EiRs who are also based at the University of Southampton, working within different departments. This has enabled us to collaborate together on several initiatives, including delivering a seminar series on Commercial Literacy and supporting a Summer Student Innovation Challenge where we were able to bring complementary experiences from our different backgrounds.”

Dr Duncan Holmes (right), EiR,
University of Southampton

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As well as helping individuals to build their personal networks, these interactions have contributed to the overarching aim of the scheme – to foster collaboration between industry and academia. The exchange of ideas at both a national and local level is essential to achieving this goal.



Leaving a legacy

The value that host institutions see in the scheme is exemplified by the resources that many have dedicated to keeping EiRs in position beyond the period funded by the grant.

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“It is essential for the UK economy that we have the skills and resources embedded in UK Universities to effectively commercialise the outstanding ideas and discoveries made in these institutions. The Royal Society’s Entrepreneur-in-Residence scheme is pioneering the work needed to achieve this.”
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Chris Finnis, EiR,
Universities of
Nottingham and
Leicester
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Several universities have funded individuals to spend more than the standard 20% FTE at their institution. Dr Nessa Carey explains that the additional time that she has been able to spend has enabled her to go significantly further with her project than she otherwise might have, saying that it has “created time to think about the things that are important, rather than always focussing on those which are urgent, and to engage in outreach to departments which have previously struggled to get involved in innovation and help them drive culture change”.

The Entrepreneur in Residence scheme has the potential to bring about lasting culture change within a host institution. This may be in the form of knowledge passed on to academic scientists who are then equipped to continue to foster an atmosphere of entrepreneurship within their department, or develop new models of engagement with industrial and entrepreneurial leaders.

The systems, processes, and ideologies put in place by EiRs can remain long beyond their time in the institution, leading to more efficient translation of research. Such changes can be self-perpetuating, creating a tradition of commercialisation within an institution or department that will attract entrepreneurial-minded individuals to come and work or study there.

The Royal Society is proud to continue the scheme and is promoting its success widely to help develop new collaborations between universities and entrepreneurial individuals.
.....

“The success of the Royal Society EiR Scheme was a key factor in being asked to continue in a similar role in a Center of Doctoral Training (CDT) As my 3-year RS EiR was such an enjoyable experience, I had no hesitation in accepting this challenge and the continuation of using my skills and capabilities for this endeavour.”
.....

Dr David King, Former EiR, Durham University
.....



“We’re lucky to have had such a high calibre of entrepreneurs and industry scientists who have driven the scheme in new and interesting directions. It is our great delight to have been able to facilitate these amazing people and we look forward to seeing what they will achieve in the future.”

Dame Sue Ion FREng FRS, Chair of the Royal Society Science, Industry, and Translation Committee

Above: First cohort of Entrepreneurs in Residence at the Royal Society in 2018.

The Royal Society

The Royal Society is a self-governing Fellowship of many of the world's most distinguished scientists drawn from all areas of science, engineering, and medicine. The Society's fundamental purpose, reflected in its founding Charters of the 1660s, is to recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity.

The Society's strategic priorities are:

- Promoting excellence in science
- Supporting international collaboration
- Demonstrating the importance of science to everyone

For further information

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Founded in 1660, the Royal Society is the independent scientific academy of the UK, dedicated to promoting excellence in science

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