Press release: UK to lead international hunt for life-changing innovations

- British businesses and innovators to get £10 million boost to bring their ideas to global market
- calls for Britain to 'double down' on innovation to make our way in the world after leaving the European Union

Science Minister Sam Gyimah last night launched the UK chairmanship of the international innovation network EUREKA, addressing the global challenge to hunt for world-changing products and services needing support to reach the market.

He attended the event celebrating the UK taking on the chairmanship of EUREKA – a global network which has invested nearly £35 billion in projects in 40 countries worldwide- for the third time. EUREKA, brings together more than 40 nations to collaborate on research and development and supports the ambitions of the government's modern Industrial Strategy.

During the one-year chairmanship, the UK aims to expand the global reach of EUREKA and will invest an extra £10 million to support UK businesses and innovators bring new products to market.

Speaking at the launch Science Minister Sam Gyimah said:

> Here in the UK, as we prepare for leaving the European Union, we face an important question: how will we as a country make our way in the world? What sort of country do we choose to be? My answer to this is clear: we will only thrive if we embrace ideas and openness, and double down on an innovative economy. Our Industrial Strategy will be key to this.
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> And we are backing this engagement with investment. Already, we have announced the biggest increase in public R&D investment for over 40 years, including the establishment of a £4.7 billion Industrial Strategy Challenge Fund to back business-focused research. And we are going further. As part of our industrial strategy, we have set out our ambition to increase the UK's R&D spend to 2.4% of GDP by 2027.
>
> EUREKA is a platform to support those partnerships in research and innovation, enabling businesses to collaborate across borders, accessing new knowledge, capabilities and markets. Today, I am delighted to announce that the UK will inject an additional £10 million for UK companies to collaborate with global businesses on innovation projects through the EUREKA platform, helping to create new products and services and drive business growth.

> It is with great pride that I launch the UK's EUREKA chairmanship, beginning on 1 July, here among so many partners from around the world. I look forward to seeing all you achieve in the coming year.

Since its creation in 1985, EUREKA has supported a range of companies and organisations.

Developing a simple, effective and highly accurate blood test to detect transplant diseases has been led through a UK and Belgium EUREKA project. Its impact has reduced transplant costs by better targeting resources and is helping to improve patient's recovery from transplants.

Cambridge based Intelligent Fingerprinting received a boost through a EUREKA project, led by the UK, Norway and France, that focused on speeding up police investigations by using new computing techniques to help scan seized storage devices. The programme has been used by major law enforcement agencies around the world.

During the event, it was also confirmed that an additional £10 million of funding is being provided to UK EUREKA participants that will open up global R&D and innovation collaboration opportunities for UK companies to help drive growth. This will help to create new products and services by providing access to specialist knowledge, people and capability supporting UK companies to take advantage of global market opportunities.

Key facts:

- EUREKA has been in existence for over thirty years
- involves 45 countries
- supports nearly 7,000 projects
- has worked with over 17,000 companies
- nearly £35 billion already invested

EUREKA is a unique network which brings together the largest grouping of national ministries and innovation agencies, including UKRI, to support global business-focussed research and development. It aims to help businesses grow and encourages greater collaboration across borders.

Since EUREKA was founded in 1985, businesses involved have shown an additional annual turnover growth of 15% better than non-participants one year after the project finishing and companies in EUREKA showed an additional annual employment growth of 7% compared to non-participating firms.

Notes to editors:

- EUREKA is supported by a Secretariat based in Brussels, who are a non-profit organisation
- the current UK budget for EUREKA programmes is €4.5 million annually
- further information available

News story: Delivering analysis with impact – opportunities and challenges

This year the professional analysts in government are combining their expertise to launch a shared vision for the Analysis Function in government. This follows the clear agreement at the first senior leaders Analysis Function conference that together the analytical professions across government can make more of their successes, challenges, and opportunities.

Despite being a small professional group, the Government Actuary's Department (GAD) has a big role to play in supporting the vision to deliver better outcomes through analysis. This was shown at the conference when Evie Calcutt and I presented GAD's work to support developing countries make informed decisions on climate risk management.

A shared challenge

Actuaries, like other professional analysts, need to communicate analytical concepts clearly to non-analysts. The climate change risk management work highlights the challenges of clear communication of technical concepts and understanding of those concepts. To integrate analysis and critical thinking into government we need everyone to think about concepts like:

- Variability and extremes: Presenting and considering the implications of more than just the most likely or average scenario.
- Dealing with and presenting uncertainty: Providing meaningful analysis even if it's very sensitive to uncertain assumptions with limited data.
- Non-linearity: Appreciating underlying drivers might have "cliff" effects. For example, a 0.1 degree difference in climate potentially resulting in catastrophic differences like certain species becoming extinct.
- Timeframes: Balancing the impact of outcomes predicted by long-term analysis vs. the shorter term political priorities.
- Interdependencies and correlation: Commissioners of analysis can focus on one risk at a time, assuming that risks are independent which can be a simplification.

Communication, communication, communication to build analytical capability

From the discussions I have had with other analytical professionals, it is clear that these challenges apply more broadly across many areas of analysis in government. So how do we actually solve the them? I suspect there isn't a magic solution. However, actuaries recognise the magnitude of the challenge and dedicate significant effort towards addressing it – as a department and a profession. By collaborating with the other analytical professions, hopefully

we can communicate more effectively than the sum of our parts.

The actuarial profession focuses on communication as one of the key skills of an actuary. It features prominently in the actuarial exam program, the ongoing requirements for continuing professional development, and our professional standards. At GAD, actuaries access a variety of internal training on communication and other soft skills and the emphasis on communication starts right at entry level. Can our analytical colleagues learn from us, and can we learn from them? The more effective we are in communicating our analysis the greater analytical capability we will build outside of our Function.

Common challenges, different insights – opportunities to collaborate

We have a lot in common across the Analysis Function, and each profession can bring useful insights such that we all clearly benefit from working together.

Each profession, including GAD, is committing a range of representatives to support the Analysis Function. We are working to support better decision making, share professional standards, manage talent, and build exciting and varied careers. With each initiative, the conversations generate more discussions of how our common goal for analysis to deliver better outcomes we identify provides more opportunities to collaborate. Personally, I am excited at the potential for learning from other professions as well as the work on loans/secondments within the Function.

Anna Edwards, Actuary, Government Actuary's Department

Press release: Foreign Secretary welcomes new UN sanctions against people traffickers operating in Libya

With the full support of the Government of Libya, Ghermay Ermias, Abdelrazak Fitiwi, Oumar Ahmad, Abu Qarin Mus'ab, Kachlaf Mohammed, and Al-Rahman Abd al-Milad, will now be subject to asset freezes and international travel ban sanctions by all UN member states, effective immediately.

This is the first time the UN has used sanctions against people traffickers, and builds on the work initiated by the UK in December 2017, following reports of slave auctions in Libya.

Welcoming the news, Foreign Secretary Boris Johnson said:

I am pleased to announce that the UK – working closely with our partners – has secured United Nations Security Council agreement to impose sanctions against six major people traffickers operating in Libya. This is the first time the UN has used sanctions against people traffickers, and builds on the work initiated by the UK in December 2017 – following reports of slave auctions in Libya in December 2017 – to secure a strong Security Council condemnation of those involved in people trafficking.

These sanctions directly target six individuals who are complicit in committing serious human rights abuses against migrants, including women and children. They have harmed their own communities, and contributed to instability, lawlessness and insecurity more widely in Libya. As a result of our action at the UN, which has the full support of the Government of Libya, these traffickers will have their assets frozen and be banned from all international travel.

These sanctions demonstrate our resolve to tackle the people traffickers and organised criminal gangs that pay no heed either to the desperate human suffering caused by their despicable trade or to international borders. It complements other UK initiatives to tackle criminal activity and protect vulnerable individuals in Libya, including capacity-building work with the Libyan law enforcement authorities and judiciary, £5m for humanitarian support to migrants in-country, and a further 3 million Euros to the EU Trust Fund for North Africa, which includes funding in Libya.

We stand ready to work with partners to introduce additional sanctions against other individuals who threaten the peace, stability or security in Libya, or who undermine its peaceful political transition.

Further information

- Follow the Foreign Secretary on Twitter @BorisJohnson and Facebook
- Follow the Foreign Office on Twitter @foreignoffice and Facebook
- Follow the Foreign Office on Instagram, YouTube and LinkedIn

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News story: Grave of D-Day army medic rededicated 74 years after his death

The rededication service for Pte Lacey Anthony Tingle took place today (Thursday 7 June 2018) at the Commonwealth War Graves Commission (CWGC) Ranville War Cemetery in Normandy, France.

The service, organised by the MOD's Joint Casualty and Compassionate Centre (JCCC), part of Defence Business Services was attended by Pte Tingle's 96 year old sister Margaret who was accompanied by her son Paul and daughter Zoe Smith. It was conducted by the Reverend Doctor Brutus Green, Chaplain to 2nd Battalion, The Parachute Regiment.

Private Tingle with his sister Margaret (Copyright Tingle family) All rights reserved

Pte Tingle's sister, Margaret Keighley of Leamington Spa said:

> It was a total surprise to me when I received the letter from the JCCC advising me that Lacey's final resting place had been found. I couldn't believe that this could be possible after 74 years.

> It was only after meeting members of the JCCC team that I realised I had never properly grieved for my brother as he was declared 'missing in action' with no known grave. So, it brings great comfort to be able to visit his grave for this rededication and finally say goodbye. I am extremely grateful to everyone for making it possible.

Military Attaché Col Chris Borneman and Margaret Keighley meet members of the bearer party after the service, Crown Copyright, All rights reserved

Rosie Barron, JCCC said:

> It has been an absolute privilege to organise this rededication service for Private Lacey Tingle and share this experience with his sister and her family. Lacey followed his conscience and refused to fight, but he was still willing to pay the ultimate sacrifice in the service of others. His courage and devotion to duty are an example to us all.

On 6 June 1944 Pte Tingle parachuted into Normandy with the 6th Airborne

Division in support of Operation Tonga, part of Operation Overlord. He was later reported as missing and was commemorated on the Bayeux Memorial in Bayeux, France.

Pte Tingle's final resting place came to light after 2 researchers submitted evidence regarding his whereabouts to the CWGC. Further research by the JCCC and the National Army Museum was undertaken to corroborate the evidence and the identification of the 'unknown soldier' grave being that of Private Lacey Tingle was confirmed by the JCCC.

The researchers' evidence revealed that on the afternoon of 7 June 1944 in the village of Douville-en-Auge, 16 miles east of Caen, a group of British and Canadian Paratroopers were surrounded by the enemy. 9 of the group lost their lives during the ensuing battle. These paratroopers were buried in the village by locals, before being moved to Ranville War Cemetery after the war. Lacey was amongst those who lost their lives that afternoon.

Rededication service for the crew of Lancaster W4849 of 156 Squadron,

The Reverend Doctor Brutus Green said:

> The story of Private Tingle, a Methodist, a teacher, but most extraordinarily a non-combatant willing to put himself in the van of the battle, once again brings home the bravery of the ordinary British soldier. Taking the service honouring a man of such faith and principle, in the presence of his family, who only now have learned the full story, is an honour and a truly humbling

> privilege. We will remember them.

Members of the Parachute Regiment and 160 Medical Regiment RAMC were also in attendance.

David Avery, CWGC said:

> After the war, Private Tingle was brought in to rest with his comrades in the Commonwealth War Graves Commission’s Ranville War Cemetery as an unidentified soldier. Thanks to the efforts of many and in the presence of his family, we are honoured to mark his grave with a new headstone bearing his name.

Margaret Keighley is joined by Reverend Doctor Brutus Green, Military Attaché, regimental representatives and dignitaries, Crown Copyright, All rights reserved

A new headstone bearing Private Lacey Tingle’s name has been provided by the CWGC, who will now care for his final resting place in perpetuity.

Press release: Scotland's space expertise key to gravitational waves study

The UK, through the work of the University of Glasgow's Institute for Gravitational Research and the Science and Technology Facilities Council's UK Astronomy Technology Centre (UK ATC) in Edinburgh, will develop the optical benches for the European Space Agency's LISA mission (Laser Interferometer Space Antenna). These optical benches are at the core of the laser interferometry measurement system, the key technology needed to detect gravitational waves.

The space observatory, planned for launch in the 2030s, will allow scientists to study these mysterious waves, improving our knowledge of the beginning, evolution and structure of the Universe. It will build on the success the LISA Pathfinder mission, which in 2016 successfully demonstrated the technology needed for LISA. It will also build on work already taking place here on Earth where UK researchers, including from STFC and the University of Glasgow, are contributing to the ongoing LIGO project that made the first detection of gravitational waves in 2015.

Chris Lee, Head of Space Science at the UK Space Agency, said:

"The University of Glasgow has a worldwide reputation for gravitational waves research, with the pioneering work of Professor Ron Drever in the 1960s leading to the Nobel Prize-winning detection of the waves in 2015. This new funding ensures this legacy continues with the LISA mission, alongside crucial technology innovation from the UK ATC in Edinburgh. Scotland is yet again at the heart of UK space activity."

The detection of gravitational waves in 2015 marked the start of a new era in astronomy. First predicted by Albert Einstein a century ago, these tiny ripples in the fabric of space-time are generated by cataclysmic events like the merger of black holes or neutron stars and offer an entirely new way to study the Universe.

Dr Ewan Fitzsimons, who was part of the team at the University of Glasgow which developed the LISA Pathfinder optical bench and is now leading the LISA team at STFC's UK ATC, said:

"It's a very interesting time right now – the amazing science that LIGO has enabled is showing us the potential of gravitational wave astronomy to revolutionise our understanding of the Universe. In addition, the success of the LISA Pathfinder mission, and now the commencement of work on LISA with UK participation has been excellent news.

"This UK Space Agency investment will ensure that UK scientists are centrally involved in developing and utilising one of the most exciting and significant

astronomy projects of the next few decades."

Dr Harry Ward, who leads the University of Glasgow's LISA team, said:

"The funding announced today sets the Glasgow and UK ATC teams firmly on the road to playing a leading role in a mission that promises to provide dramatically new insights into the nature and evolution of the Universe.

"After working very hard for over 15 years to bring LISA Pathfinder to such a successful conclusion, we are very happy indeed to be so strongly supported to take the crucial next step towards LISA. This commitment from the UK Space Agency will ensure that UK technology will lie at the heart of the most revolutionary astronomy mission of the next 20 years."

Gravitational waves can be studied from space, away from ground-based 'noise' and measured over vast distances. LISA will be able to observe new sources invisible to the ground based gravitational wave observatories like LIGO. The LISA mission will study these gravitational waves using three spacecraft flying in a triangular configuration, separated from each other by a distance of 2.5 million km. At the heart of each spacecraft will be an interferometer.

These interferometers fire laser beams between each satellite, using them to measure tiny fluctuations in the distance between the spacecraft, which arises when a gravitational wave passes by. Although the waves are generated by massive, violent events, they are miniscule and the interferometers must measure these tiny squeezes and stretches of the light beams to a few trillionths of a metre.

To support this the optical components of the interferometer must be arranged on an innovative optical bench that is thermally and mechanically isolated from any other effects apart from gravitational waves.

The team at the University of Glasgow designed and built the optical bench for LISA Pathfinder with funding from the UK Space Agency and STFC, supported in the early development phase by STFC's RAL Space. The LISA Pathfinder mission, which launched in 2015 and ended in 2017, successfully showed that two test masses at the heart of the spacecraft could be put into a state of virtual free fall in space, under the influence of gravity alone and unperturbed by other external forces, with a precision more than five times better than originally required. The Glasgow team will build on this world-leading experience to develop the optical benches for LISA.

LISA Pathfinder only used one optical bench, which the Glasgow team built by hand, while LISA will be more complex and on a larger scale, requiring up to 12 benches. STFC's UK Astronomy Technology Centre will partner with the University of Glasgow to develop the robotic ultra-precision technology required and lead the overall design and build of the LISA optical benches. This technology will be developed specifically for LISA, but the work of the UK ATC facility in this area is expected to be of considerable interest to UK optics and photonics companies once the robotic technology is proved.

The first optical bench is due to be delivered to ESA around 2030.