

News story: New bullet-proof material unveiled as Defence Minister visits MOD's research hub

On her visit to the Defence Science and Technology Laboratory (Dstl), she spoke with scientists who are creating a lighter, more flexible body armour for soldiers which uses a unique synthetically adjusted ceramic material that still stops bullets.

Defence Minister Harriett Baldwin said:

We've spent millions on innovation this year, developing technologies like a new way to uncover insurgents' fingerprints to mini-drones that investigate chemical hazards. The goal is always to help our Armed Forces defend the UK, and this next generation of armour will make our troops even more alert and effective on the battlefield.

Research has indicated soldiers wearing ceramic armour could see a 35 per cent weight reduction, which could make them faster and more comfortable in a warzone, whilst maintaining a high level of protection.

The synthetic biology for the armour project has been running for four years and Dstl are now ready to put samples through hardness testing. They also confirmed that a scale-up process is underway to produce samples that can be used for live-fire testing.

£6 million has been invested in synthetic biology to date for novel materials research, reaching out to academia and industry via a series of competitions. In some cases these competitions have been run jointly with the Research Councils, in others they have been run independently using MOD organisations, such as the Defence Accelerator.

The MOD has committed 1.2% of the rising £36bn defence budget, supported by a dedicated £800m Innovation Fund, to cutting-edge science and technology. 2017 has seen a number of exciting projects developed as part of the drive, to name just a few:

- A pocket-sized drone and a mini-detector known as Snake Eyes are amongst the new high-tech gadgets set to investigate future chemical or bio-hazards.
- A world-first in the US saw British soldiers controlling 4x4s with Xbox-style controllers and a UK driverless truck leading American trucks in an unmanned convoy, providing a glimpse into the future of getting much-

needed supplies to the front line.

- Cutting-edge fingerprint technology aimed at targeting criminals.
- A Laser Directed Energy Weapon that is capable of acquiring, tracking and engaging aerial and surface targets at various ranges and in different weather conditions.
- A new lightning-fast protection system, Icarus, which will be able to detect and defeat threats to armoured vehicles within 100 milliseconds.

The Defence Accelerator funds the development of suppliers' innovative ideas and provides support through to potential application. The Accelerator also funds innovations for defence and security which support economic growth and prosperity in the UK.

The Accelerator is approaching its first anniversary and has enjoyed great success, including:

- Launching 8 themed competitions
- Running 18 competition events
- Assessing over 630 proposals
- Funding 147 proposals with an investment of £17.3m

[Press release: Change of Governor of Montserrat in January 2018](#)

Mr Andrew Pearce OBE has been appointed Governor of Montserrat in succession to Ms Elizabeth Carriere who will be leaving the Diplomatic Service. Mr Pearce will take up his appointment during January 2018.

CURRICULUM VITAE

Full name: Andrew John Pearce OBE

Married to: Pornpun Pearce

Children: Two

2017 – present Vilnius, Chargé d'Affaires

2015 – 2016 FC0, Director of Security, FC0 Services

2009 – 2015 FC0, Head of Security, Estates and Security Directorate

2004 – 2008 Bangkok, Deputy Head of Mission and Political Counsellor

2000 – 2003 Bucharest, Deputy Head of Mission and Political Counsellor

1996 – 2000 Pretoria, Head, Economic and Trade Policy Team

1992 – 1996 Tel Aviv, Head, Press and Political Section

1990 – 1992 FC0, Head, Gibraltar and Iberian Section, Southern European Department, Europe Directorate

1988 – 1990 FC0, Head, Chemical and Biological Weapons Negotiating Team, Arms Control and Disarmament Department

Further information

[News story: Government Chemist at the APA Conference](#)

Who are the Public Analysts?

Public Analysts are highly skilled scientists who carry out chemical analysis and related testing for public protection enforcement purposes. In Scotland, Public Analysts are also responsible for microbiological examination of food. Public Analysts are required to hold an MChemA (Mastership of Chemical Analysis), as prescribed by the Food Safety Regulations 2013. The Association of Public Analysts holds an annual conference, which includes recognising newly MChemA qualified candidates.

Annual APA conference – October 2017

The conference, set in the precincts of Canterbury Cathedral, was an informative and enjoyable occasion. Michael Walker, from the Government Chemist team, chaired a session of the conference and updated delegates on referee casework. Talks ranged widely from the contributions of George Wigner, a 19th Century Public Analyst to the preservation of Cleopatra's Needle (Mr Chris Elliott, University of Southampton) to aquatic animal health (Dr Stephen Feist, Cefas, Weymouth Laboratory). Dr Jacqui McElhiney (Food Standards Scotland), discussed developing new food surveillance models in Scotland and Robbie Beattie (Edinburgh Scientific Services) described the molecular biology and microbiology of shigatoxigenic and verotoxigenic 'Escherichia coli'. Key insights on global control measures for mycotoxins were given by Professor Ray Coker.

At the conference dinner the APA President, Jon Griffin MChemA, welcomed three new MChemA holders, Emma Downie (PASS Ltd), Micheal Kierszten (Dundee Scientific Services) and Bharathi Reddy (Lancashire Scientific Services). These scientists are looking forward to their first appointments as Public Analysts. The APA also awarded honorary membership to Professor Duncan Thorburn Burns FRSE MRIA in recognition of his lifetime research into food analysis and significant contributions to the [Journal of the Association of Public Analysts](#).

Professor Duncan Thorburn with Jon Griffin

For more information about the work the Government Chemist does contact:

[News story: GC contributes to special edition of international journal](#)

The Government Chemist has been invited to contribute to a special edition on food allergen analysis in the highly respected journal of the AOAC INTERNATIONAL

AOAC INTERNATIONAL (formerly Association of Official Analytical Chemists) is a not-for-profit association founded in 1884 as a forum for microbiological and chemical standard methods used globally to promote trade and to facilitate public health and safety.

The J AOAC Int special edition on food allergens is being guest edited by Bert Popping and Carmen Diaz-Amigo and will contain three papers from the Government Chemist. Michael Walker, Malcolm Burns and colleagues describe the science behind the ground breaking analysis for allergens by ELISA, Molecular Biology, and Protein Mass Spectrometry during the investigation of the almond and mahaleb incidents in 2015. Michael and co-authors Hazel Gowland and John Points discuss managing food allergens in the UK retail supply chain in a second paper. Milena Quaglia, Kate Groves and Adam Cryar assess recovery of food allergens from solid processed matrices applying SI (International System of Units) traceably quantified milk protein solutions and a novel extraction method in a third paper in the special edition.

The special edition will span the globe with contributions from five continents on topics as diverse as food allergen labelling and regulation, quantitative ELISA, targeted and novel mass spectrometry approaches to allergen analysis and analytical devices for use by consumers. The edition will be open access and is expected to be available on the J AOAC International website in December.

[News story: CMA launches consultation on 2018/19 annual plan](#)

Making sure consumers get a good deal from businesses and that firms treat their customers fairly remains central to the CMA's work.

Across all its work next year, the CMA [proposes](#) to take a particular interest in vulnerable consumers and ensuring that markets can be trusted. It also plans to work with partners, including groups which represent vulnerable consumers, to learn more about how people's circumstances can affect their ability to engage in markets and get a fair deal.

The CMA also plans to better connect the CMA and the role of competition with wider society, by clearly explaining how better competition is good for ordinary people who benefit from better products and services, and good for the economy because it means that the best businesses succeed and grow.

To ensure its practices, interventions and capabilities keep pace with the tech-enabled evolution of business models and practices, the CMA plans to continue to expand its digital analysis capabilities, including by establishing a new digital, data and tech team. In the online world it intends to make sure that organisations which hold significant market power do not abuse it and that algorithms and forms of artificial intelligence do not become enablers of collusions.

There are [proven links](#) between strong competition, higher productivity and economic growth. By prioritising cases in markets which underpin and enable economic growth, and helping to create the conditions which allow innovative businesses that treat their customers well to emerge and succeed, in 2018/19 the CMA can continue to make a valuable contribution to addressing the UK's longstanding problem with low productivity.

In 2018/19, the CMA will continue its preparations for the UK's exit from the EU, building its capacity and capabilities to prepare for a greater role in the review of global mergers and international competition enforcement investigations post-Exit.

The CMA will also increase its presence and capabilities outside London by opening a new, expanded Edinburgh office, ensuring that it is keeping in touch with markets and consumer issues in Scotland.

David Currie, CMA Chairman, said:

With increasing and accelerating changes to the world in which we operate – in the run-up to and beyond the UK's exit from the EU – the coming few years will be ones of opportunity and

transformation, for the CMA and the competition and consumer regimes.

The investments we have made since we were formed in 2014 are delivering real results for consumers, and we will continue to invest further so that our capacity and capabilities match our ambition.

We've carried out a wide range of work that makes a real world difference for people every day, as well as helping fair-dealing businesses to thrive and the economy to grow. We have been increasing pace, scale and impact across all our work and our draft priorities show that this is a journey we are committed to continuing in the coming year. We look forward to receiving views on our proposed plans for next year.

The CMA will enter 2018/19 with a substantial volume of ongoing work and is currently running 15 competition enforcement cases, 7 consumer enforcement cases, 11 merger investigations and one market investigation. Most recently, it [provisionally found](#) that a pharmaceutical company abused its dominant position by overcharging the NHS by millions for an essential thyroid drug. Having concluded its [digital comparison tools \(DCTs\) market study](#) in September, it also recently [published the final report](#) in its study into care homes for the elderly, issuing a series of recommendations to make the market work better for residents and their families.