



Durham
University

Research and
Innovation Services

Inspiring the extraordinary

Connect: a newsletter for our Members of Parliament 2nd Edition



There is a tendency to think of university researchers as people diligently working away in a laboratory somewhere, engaged on ground-breaking projects that seem very distant to our everyday life. In many cases, this is probably true, but there is also a huge amount of research that directly impacts on lives of individuals, businesses and our community as a whole. In this second edition of Connect, we explore some of the research projects that have been worked on at Durham University that really have made a difference to our surrounding area.

From the Water Hub partnership and how it is helping evolve policy making on flooding and water sustainability, to COAST which helps SMEs in County Durham develop new products and grow their businesses, through to how our Chemistry department is supporting aspiring scientists in County Durham's sixth form colleges. We also celebrate the work of Professor Carlos Frenk.

Rachael Richards - Director of Public Affairs, Durham University

In this issue

- *COAST: Collaborative Outreach in Applied Surface engineering Technology*
- *Flooding, sustainable drainage and water efficiency: sharing our knowledge*
- *Levelling Up: Aspire Higher*
- *Professor Carlos Frenk: Clarivate Citation Laureate*

Welcome to Durham University's Spring edition of Connect



COAST: Collaborative Outreach in Applied Surface engineering Technology

Between July 2017 and December 2020, Durham University Department of Chemistry worked on a collaborative project with CPI, a technology innovation centre (and member of the Government's High Value Manufacturing Catapult). Funded through the European Regional Development Fund (ERDF), the project offered direct support to high technology, high growth SMEs and start-ups in the region.

COAST supported SMEs to develop new products enabled by nanotechnology and advanced materials. 80% of those SMEs operate in the County Durham area, where economic analysis had highlighted unfavourable levels of investment in nanotechnology and high value innovation. COAST aligned closely with national and regional policies including the UK Government's Industrial Strategy and North East Strategic Economic Plan supporting the development of new novel products and the creation of high value jobs in the region.

The COAST programme addressed barriers faced by SMEs, particularly with access to equipment, skills and supply chain networks needed to develop new technologies and compete commercially.

The four post-doctoral research associates involved at Durham University worked on a range of business specific projects developing nano-particles in coatings, surface engineering and composites. Their work enabled SMEs to develop valuable new products as a result of the support offered, which would otherwise have been unaffordable to the companies involved.

SMEs surveyed reported that they had achieved significant additional success because of the COAST programme. 85% of SMEs confirmed they had achieved growth and further investments that would not have been possible without support from CPI and Durham University. Evaluation of the project has concluded that it helped to generate at least an additional £4.7 million of investment, with a Gross Value Added (GVA) of £3.9 million.



In total, 68 SMEs were supported through the project, with 29 direct jobs being created and a further 26 indirect posts nationwide.

When surveyed about the programme, 82% of SMEs rated their overall experience of the COAST programme either excellent or very good. 97% of SMEs said it would recommend the COAST programme to another business or apply to a similar programme in the future, and 82% of SMEs said it felt its business was in a stronger position than it was previously because of the COAST programme.

An indirect benefit from COAST is the experience and new skills gained by the CPI and Durham University teams. Supporting programmes like COAST actively encouraging a collaborative learning environment between the grant recipients and SMEs, will aid the future development of a Durham-based nanomaterial innovation ecosystem.

The COAST Project was led at Durham University by Professor Karl Colman, Head of the Department of Chemistry with support from Jenny Taylor, Head of Economic Development, Research and Innovation Services.



Flooding, sustainable drainage and water efficiency: sharing our knowledge

The Water Hub is a partnership between Durham University, Northumbrian Water, Durham County Council and the Environment Agency, initially funded through the European Regional Development Fund from 2017 to 2020, the Water Hub brings together policymakers, researchers, local communities and business to develop innovative solutions to challenges of water management.

The project's achievements include

- a positive net additional impact of £1.7 million and a return on investment of £6.80 for every £1 of ERDF spent
- 162 SMEs actively engaged with the Water Hub, 51% of which were based in the North East and all working into the region
- SMEs surveyed (26 in total) reported a 36% increase in turnover, 121% increase in R&D expenditure, 14% increase in employment.

More information can be found at <https://www.thewaterhub.org.uk/>

Building on the success of the Water Hub, throughout 2020 Durham University, represented by Professor Louise Bracken and Dr Sim Reaney (Department of Geography) worked with Think Tank Policy Connect and the Westminster Sustainable Business Forum on the 'Bricks and Water' inquiry.

The final report, launched in October 2020 calls for action to ensure that new homes are water efficient, resilient to flooding and dispose of surface water sustainably. The Water Hub, is included as a case study for innovation and engagement of small and medium sized businesses in finding local solutions to challenges of flooding, sustainable drainage and water efficiency.

The Durham team also submitted evidence to the recent EFRA Select Committee inquiry into flooding, calling for greater empowerment of communities in building resilience and response to flood risk, including with a focus on trauma induced mental health, the need for closer integration of flood risk and planning requirements, strengthening the law on access to existing sewer systems, and increased use of sustainable drainage, all recommendations echoed by the committee in its report to government in January 2021.



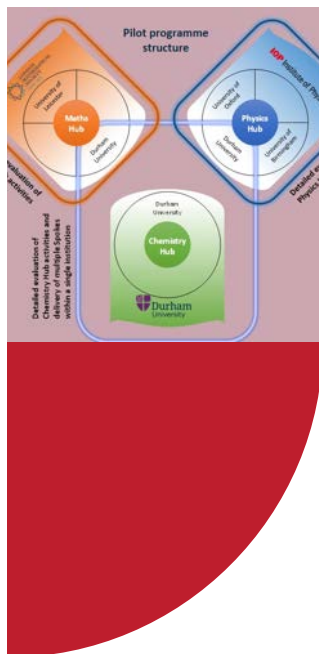
Levelling Up: Aspire Higher

Durham University is one of just a handful of higher education institutions across England that are participating in the new, philanthropically-funded Levelling Up: Aspire Higher programme, and the only university to run all three strands for the initial cohort: Chemistry, Mathematics and Physics. It is run in conjunction with the London Mathematical Society (for the Maths strand) and the Institute of Physics (for the Physics strand) and has been launched with the support of a generous gift from philanthropist Dr Tony Hill. Durham's School of Education is running an evaluation research project alongside the programme aiming to understand the impact of the whole programme, including at the other universities taking part nationally: Birmingham (Physics), Leicester (Maths) and Oxford (Physics).

At Durham, the scheme has a Programme Team made up of colleagues in the Departments for Chemistry, Mathematics and Physics, and offers academic and pastoral support to students in Years 12 and 13 who hope to go on to study Chemistry, Mathematics, Physics or a related STEM subjects at university level. It is open to students in Year 12 (ages 16-17) from across the UK, but with the hope that many students will be encouraged to apply from the North East area.

The programme includes academic tutoring and mentoring from current Durham students and staff in the given subjects, and additional activities such as guest lectures, from the University community, and former Durham students now working in a range of industries. All aspects aim to prepare students not only academically, but also for the broader transition from school to a higher education community.

The programme has recruited over 100 participants across the three subject strands. Following the Programme Launch on 16th March 2021, initial tutorials and mentor sessions are set to take place before Easter, with the programme of activities continuing for this cohort until near the end of their school studies at the end of Year 13, in Spring 2022.



Professor Carlos Frenk: Clarivate Citation Laureate

Professor Carlos Frenk, Ogden Professor of Fundamental Physics and founder and former Director of the Durham University Institute for Computational Cosmology, was named as a Clarivate Citation Laureate last October. This was in recognition of Professor Frenk's studies of galaxy formation and evolution, cosmic structure, and dark matter halos.

Professor Frenk is one of the world's foremost scientists behind the theory of cold dark matter, the mysterious substance thought to make up a large part of the universe. This thinking has done much to shape the current view of galaxy formation and the large-scale structure of the cosmos.

Professor Frenk also holds the Royal Astronomical Society's highest honour, the Gold Medal for Astronomy, whose previous recipients include Albert Einstein, Charles Babbage and Edwin Hubble.

Clarivate, formerly the Intellectual Property and Science division of Thomson Reuters, draws on publication and citation data to identify exceptional researchers in fields attracting Nobel Prizes: physics, chemistry, medicine and economics. Clarivate's annual announcement of Citation Laureates recognises those whose work has been highly-cited by fellow scientists and whose contributions to science have been extremely influential and transformative. So far, 54 researchers listed in Clarivate's Hall of Citation Laureates have gone on to receive a Nobel Prize.

This listing puts Durham first in the UK, third in Europe and joint fifth in the world for the strength of our research in Space Science.





Durham
University

Research and
Innovation Services

Contact the team

Rachael Richards
Director of Public Affairs
rachael.l.richards@durham.ac.uk

Stephen Evans
Director for Policy Engagement
stephen.n.evans@durham.ac.uk

Neil Heckels
Senior Policy Engagement Manager
neil.heckels@durham.ac.uk

Durham University
Palatine Centre
Stockton Road
Durham
DL1 3LE

About our policy team

Durham University's policy team is responsible for building relationships with policymakers regionally, nationally and internationally to optimise the external impact of Durham's world-leading research

Our key external relationships include politicians, government departments and agencies, non-departmental public bodies, think tanks, learned societies, NGOs and the voluntary sector – at regional, national and international level.

For more information, visit
durham.ac.uk/research.innovation/business.engagement/policyhub

durham.ac.uk

Durham University and Durham University logo are registered Trade Marks of the University of Durham. Unless otherwise stated, all material in this publication is copyright of the University of Durham. The University makes every effort to ensure that the information contained here is accurate. This publication is intended as a general guide to University of Durham's facilities and form no part of any contract between you and the University. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording or otherwise, without the permission of the University. Please note that the University's website is the most up to date source of information and we strongly recommend that you always visit the website before making any commitments.

© Durham University 2020

OUT_1949812