KNOWLEDGE EXCHANGE NEWS 25

YORK'S BIEI PROFESSORS: PIONEERING RESEARCH AND IMPACTFUL COLLABORATION

The Building Industrial Engagement and Impact (BIEI) Academic Professors at the University of York are providing opportunities for pioneering research and impactful collaboration with industry. In this series of articles, we showcase the work of three BIEI professors who are driving innovation and addressing complex challenges in their respective fields.

A Focus on Real-World Impact

Professor Jason Snape, Business, Industry, Enterprise and Impact (BIEI) Research Professor

I joined York directly from AstraZeneca where I had Board and Senior Executive Team accountability and responsibility for their global environmental sustainability strategy. I was also a member of their UK and Global Senior Leadership Teams.

Throughout my career, I have always brought academic, government, industry and third sector scientists together to address critical environmental and societal issues with a solution-focused and systems-level mindset. My curiosity-driven and applied research has largely been at the science-policy-business interface. Its outputs have improved European regulatory guidance for the environmental hazard and risk assessment of chemicals and pharmaceuticals. My work has also delivered bioethical benefits by removing the regulatory requirements for fish testing for antibiotics, and established safe discharge limits for antibiotics that were adopted by industry alliances and policy frameworks.

At York, I will work across faculties and departments to develop research partnerships and projects that maximise our engagement with business, industry and policymakers. I am outcome-focused, and my aim is to provide real-world solutions to local, regional, national and global problems that deliver quantifiable economic, social and environmental benefits.

Areas I am focused on are multi- and inter- disciplinary challenges, where I am committed to work with University of York researchers and key external stakeholders to drive public good and impact and include:

- Ensuring that access to, and delivery of, healthcare is sustainable.
- Managing the societal risks posed by the environmental dimension of antimicrobial resistance.
- Sustainable approaches to waste management that reduce greenhouse gas emissions and address chemical pollution.
- Embracing digital and molecular technologies to predict environmental hazards and risks earlier in chemical discovery and development.

Reach out to **Jason Snape**

Driving into the future: How AI is changing the automotive industry

Professor Simon Burton, Business, Industry, Enterprise and Impact (BIEI) Research Professor

The automotive industry has made significant investments in artificial intelligence (AI) in recent years, incorporating AI-enabled features like automated emergency braking and lane-keeping assist to enhance road safety and reduce accidents. However, the journey towards fully automated driving has underscored the necessity of ensuring these technologies don't introduce new risks to drivers, passengers or other road users. Building and maintaining public trust requires rigorous safety standards that offer clear guidance to manufacturers and a framework for regulatory oversight.

Professor Simon Burton, Chair of Systems Safety and Business Director for the Centre for Assuring Autonomy, is at the forefront of this effort. The role of Chair of Systems Safety is one of the newly created Building Industrial Engagement and Impact (BIEI) professorships. His work bridges systems safety engineering, AI, and regulatory needs for autonomous systems. With over 20 years in automotive Research and Development, Simon has led an international committee of over 130 experts from major companies like Aptiv, BMW, Bosch, Continental, Nvidia, Mercedes, Qualcomm and VW to develop **ISO PAS 8800**, the first international standard for AI safety in vehicles.

Simon's unique mix of industry experience, AI safety research, and neutral academic role make him an ideal leader for the international AI safety standards committee. His expertise helps bridge theoretical, technical, legal, and societal perspectives, ensuring practical, achievable standards. During the last plenary meeting in July in Toulouse, he was elected to continue leading the committee for a further three years. Simon's leadership in this initiative highlights the importance of university-industry partnerships in addressing complex technological and societal challenges.

More recently **ISO PAS 8800** has passed its final international balloting phase with unanimous support and is now being prepared for release. This standard will ensure consistent safety levels for future AI-enabled vehicle functions and allow regulators to manage their safe deployment.

Reach out to **Simon Burton**

Simon is first from the left

Fixing our built environments: how can academic research impact industry and effect societal change?

Professor Francesco Pomponi, Business, Industry, Enterprise and Impact (BIEI) Research Professor, York School of Architecture

Buildings are integral to our lives, from birth to old age. However, we often overlook their significant contribution to major environmental issues like climate change, diminishing biodiversity and resource depletion.

The energy required to power buildings, as well as the energy used to produce and transport building materials, contributes to approximately 40% of total global energy consumption. This significant impact on energy consumption is mirrored in other environmental concerns, such as greenhouse gas emissions, resource depletion and waste production, all of which are associated with the built environment.

We're facing a growing, increasingly urbanised global population, which means the demand for new construction will keep rising. The construction sector is also vital for economic growth. So, how can we balance environmental protection with societal well-being and economic stability?

Professor Pomponi has dedicated his career to addressing this challenge, focusing on making his research applicable outside of academia. He has collaborated with industry to develop national methodological guidance for built environment professionals. Through Knowledge Transfer Partnerships (KTPs), he has worked to evaluate the environmental impacts of industries previously overlooked in mainstream assessments. His startup, which promotes sustainability in construction, has secured venture capital funding. Francesco also collaborates with local governments to ensure transparency in industry assessments. This work is currently being piloted in Westminster and will expand across London in 2025.

At the University of York, Francesco is looking for like-minded colleagues who share his passion for tackling major global challenges. He's keen to secure industrial support for his ongoing research in this space, supervise PhD students, lead and contribute to research proposals and support colleagues interested in engaging with industry and stakeholders outside of academia.

Reach out to **Francesco Pomponi**.

Can forest schools help address the growing mental health crisis in children?

Peter Coventry, Professor of Environment and Mental Health, Department of Health Sciences

In the UK up to one in six children aged 5-16 now experience a mental health problem, and demand for mental health services has surged by over 80% since the COVID-19 pandemic.

This surge in demand highlights the significant impact of the pandemic on children's mental health, exacerbating existing issues such as isolation, reduced social interaction and academic stress. However, accessing mental health services is often challenging, with long waiting lists and limited resources. This makes early intervention in schools critical.

The Forest School INterventions for Children's Health (FINCH) study, co-led by **Dr Hannah Armitt** and **Professor Peter Coventry**, explores whether outdoor, nature-based activities could help improve children's mental well-being. Forest Schools offer child-led, immersive learning experiences in natural settings, which are thought to build emotional resilience and reduce anxiety.

Rooted in Scandinavian traditions, Forest Schools encourage children to explore and play outdoors, fostering problem-solving skills, confidence and emotional regulation. Research suggests that these activities can help children manage stress, build stronger relationships and develop a connection to nature, all of which are important factors in mental health. Moreover, children from disadvantaged backgrounds, who often face higher risks of mental health issues, may particularly benefit from these inclusive, outdoor approaches.

The FINCH study will evaluate the impact of Forest Schools on emotional well-being, behaviour, and connection to nature in eight Yorkshire primary schools. By combining both qualitative and quantitative methods, the study aims to provide evidence on whether Forest Schools can be integrated into wider education and health systems to support children's mental health. This accessible, nature-based approach has the potential to transform mental health interventions for young people.

Photo credit: Marnie Palmer, Kingsmill School

Unlock the potential of your research: Upcoming training in research impact and knowledge exchange

Don't miss out on two exciting opportunities to enhance your research impact and knowledge exchange skills before the year ends!

There's still time to log in to **Research Impact: Creating Meaning and Value**, which is available until the end of 2024. This self directed interactive resource is perfect for researchers and support staff at all levels, offering five engaging modules (approximately 30 minutes each) that explore key topics like planning for impact, stakeholder engagement, and impact evaluation. With real-world examples and activities from various disciplines, you'll gain practical insights to maximise the reach and significance of your work. These modules are available to all **York staff** and **postgraduate students** and feedback from users at York is extremely positive, with 97% of respondents finding the modules useful and 73% finding them very or extremely useful.

Also coming up soon is an online bitesize **Introduction to Research Impact and Knowledge Exchange**, on 3rd December. This short webinar will provide an overview of essential concepts and strategies for researchers and research support staff. Discover how to amplify the impact of your research and explore the wealth of support available at the university, including funding opportunities, training resources, toolkits and dedicated experts ready to assist you. **Register now to secure your spot!**

We're also planning further activities for the new year, including training on engaging with business and other external organisations – watch this space!

Have questions or want to learn more? Contact us at **impact-and-ke-training@york.ac.uk**