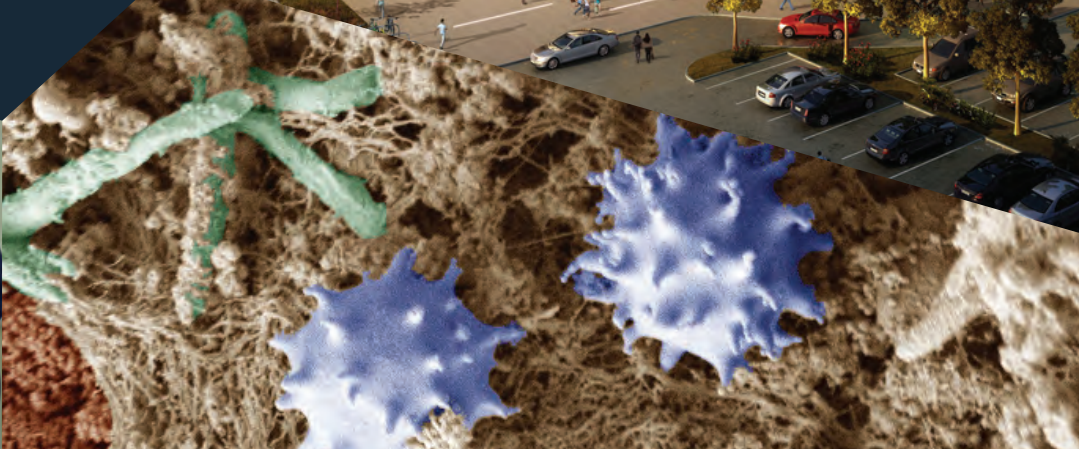




Quadram  
Institute

Science ◀ Health ◀  
Food ◀ Innovation

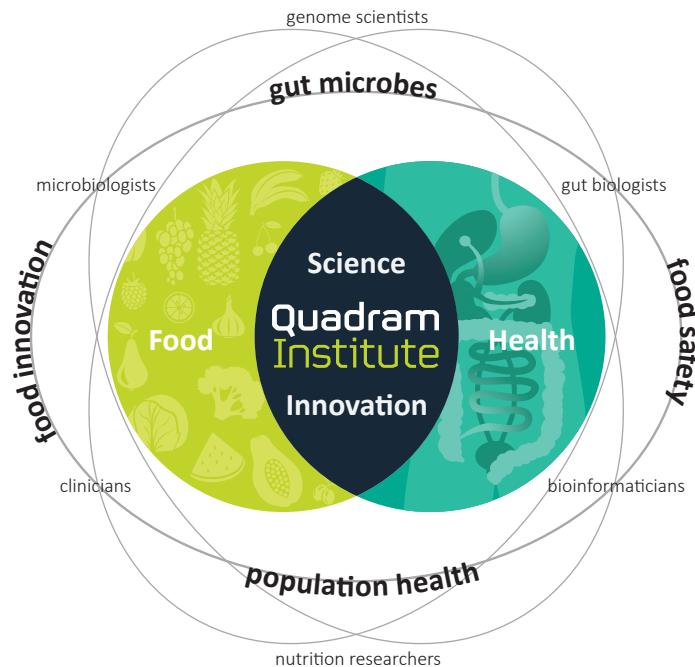
At the forefront of a new era  
of food and health research



## A pioneering new facility for food and health research

The Quadram Institute is at the forefront of a new era of food and health research, working at the interface between food science, gut biology and health. It will develop solutions to worldwide challenges in food-related disease and human health, with a lifelong focus from establishing optimum health at birth through to ensuring we age healthily. The Quadram Institute is assembling interdisciplinary teams and working with appropriate international organisations to address these major issues. Scientists and clinicians working together under one roof will deliver innovative new healthcare solutions.

Genome scientists, microbiologists, immunologists, gut biologists, mathematicians, clinicians, food scientists and nutritionists will link with each other across the fundamental and translational research pipeline: from lab to bedside, food to plate, and diet to health to deliver scientifically-validated and clinically-tested strategies to improve human health and wellbeing throughout life. The Quadram Institute will build on recent understanding of how food and the gut microbes interact, which is creating a fundamental shift in the way we understand and address the impact of food on health.



The Quadram Institute will be an international hub for food and health research working across four themes: the gut and the microbiome; population health and ageing; food innovation; and microbes in the food chain. It is perfectly positioned to harness leading-edge technologies to help tackle these problems by offering:

**A partnership** with the Norfolk and Norwich University Hospital and the University of East Anglia, bringing excellent teaching, research and patient care together, and synergising collaborations on the Norwich Research Park in food and health.

**A Regional Endoscopy Centre** with capacity for 40,000 procedures per year, making it one of Europe's largest.

**A Clinical Research Facility** for undertaking human trials.

**Co-location on the Norwich Research Park** with the John Innes Centre, world leaders in plant, crop and microbial science and the Earlham Institute and their leading-edge genomics technologies and mathematical biology expertise. This facilitates research from fundamental science on crop genetics through to microbial population studies to clinical research to validate health benefits: a plant-microbe-food-health pathway that's unique in the UK and the rest of the world.

**A cross-disciplinary approach** combining fundamental and clinical research with mathematical biology and genetics, to understand the complex interactions between the human microbiome, physiology and health.

**A translational pipeline** working closely with industry that exploits advances in plant and crop genetics to make new foods with health-promoting properties, and translates understanding of gut health and the microbiome into innovative new therapies.





An interdisciplinary centre of excellence: high quality research and clinical expertise, innovation and translational research, delivering individual, societal and economic benefits.



Researchers, clinicians and patients coming together in one building, accelerating the application of new scientific discoveries to prevent disease, improve treatments and increase our understanding of human nutrition and wellbeing.

## A 21st Century approach to the global challenge of food and health

Poor diet is one of the biggest global contributors to early death. Malnutrition affects much of the world's population, in the form of obesity, nutrient deficiency and undernourishment.

Food-related illnesses are a worldwide problem, causing over 350 million deaths each year. Gut microbes are becoming a significant focus for medicine and health research as we unravel the impact our microbiome has on our health.





Chronic, diet-related disease costs the UK £5.1 billion per annum in direct health costs and is estimated to cost the wider economy around £16 billion every year.

This figure is predicted to rise to £50 billion by 2050 if no action is taken. In the developed world we are living longer, but we are not living healthier into old age, putting huge pressure on healthcare systems.



The Quadram Institute is at the heart of the Norwich Research Park, a community of over 3,000 scientists working in 6 leading organisations and 80 businesses, offering an interdisciplinary approach to translating excellent fundamental science into pioneering solutions for societal benefit. The Quadram Institute has been established to capitalise on this world class bioscience cluster.

It is a partnership between

-  **Quadram Institute Bioscience**
  - fundamental and applied research addressing challenges in food innovation, understanding the microbiome, food safety and population health. QIB transitioned from being the Institute of Food Research in 2017.
-  **The University of East Anglia** – a UK Top 15 and World Top 200 university\*, UEA’s highly cited research connects world leading academics with society, government and industry.
-  **The Norfolk and Norwich University Hospitals NHS Foundation Trust (NNUH)** - One of the 15 largest teaching hospital trusts in the UK, with state-of-the-art facilities, providing a regional bowel cancer screening programme and one of the biggest colorectal surgery and gastrointestinal endoscopy services in Europe.
-  **The Biotechnology and Biological Sciences Research Council (BBSRC)**, part of UK Research and Innovation (UKRI), which invests in world-class bioscience research and training on behalf of the UK public.

\*The Times/Sunday Times 2018 and Complete University Guide 2018 & Times Higher Education World University Rankings 2018



## Innovation & translation

The Quadram Institute building has been constructed to foster scientific collaboration among clinicians and scientists from different disciplines to accelerate translation of fundamental science to benefit consumers, patients and the bioeconomy. Researchers will work alongside industry to deliver impact, with commercial laboratory space available.

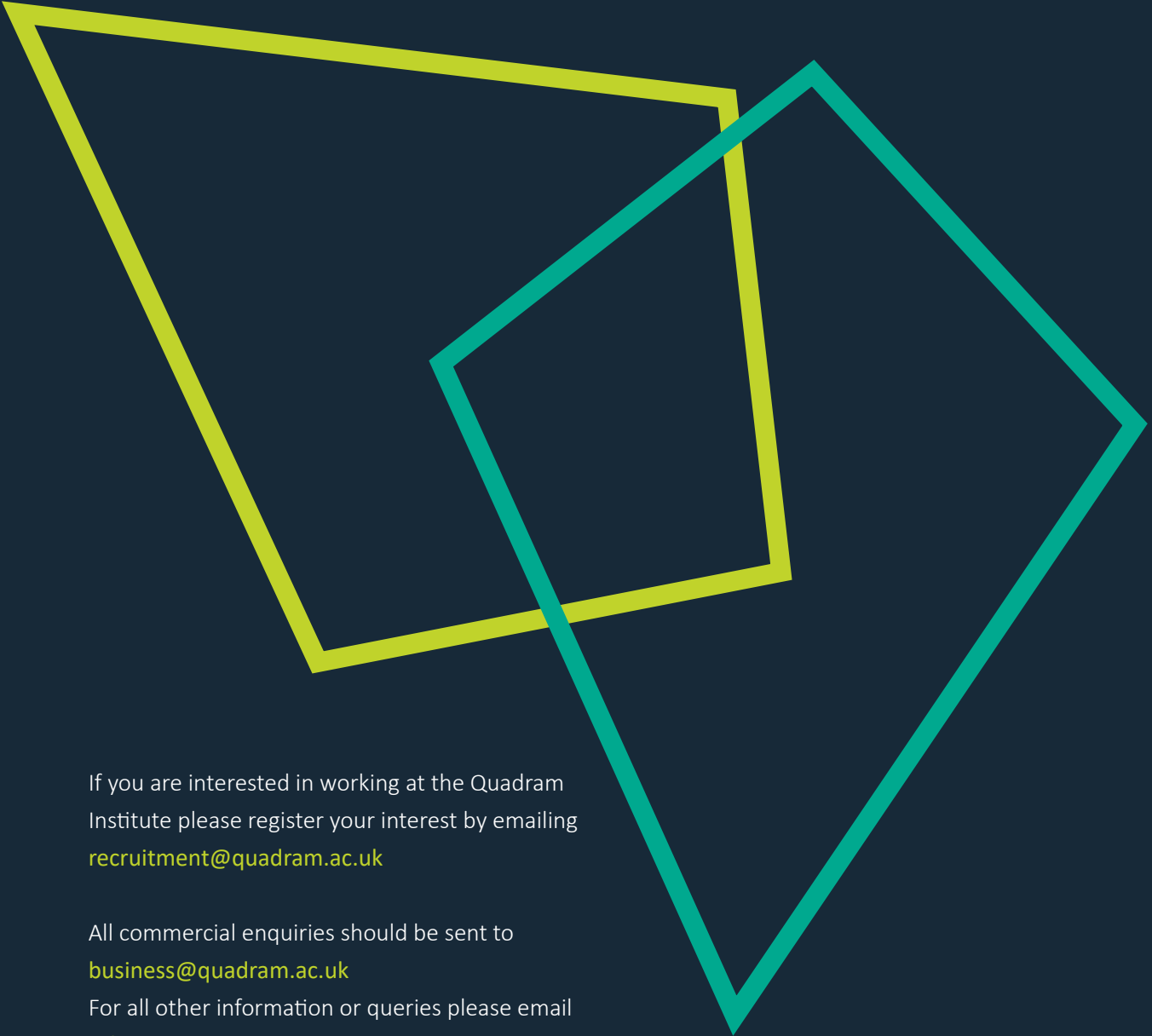
The Quadram Institute Regional Endoscopy Centre run by Norfolk and Norwich University Hospital will provide an important service to gastrointestinal endoscopy patients, with a capacity to carry out at least 40,000 procedures each year.

Having this facility in the same building allows for close collaboration with researchers studying gut health.

The Quadram Institute Clinical Research Facility, managed by the Norfolk and Norwich University Hospital includes purpose-built clinical trials and assessment rooms, participants' lounge, kitchen and dining space alongside laboratory and supporting rooms. This provides excellent facilities for trials with human participants, critical for understanding links between food and health, generating scientific evidence for health claims and accelerating innovation in food and therapies.

## The gut and the microbiome; population health and ageing; food innovation; and microbes in the food chain. These interconnected research themes deliver a pipeline of research in plants, microbes, food and health.

- Improving knowledge about how plant bioactive metabolites maintain and promote human health, and prevent the onset and progression of chronic disease.
- Harnessing the advances in plant and crop genomics to develop new crops with enhanced quality traits for human health.
- Revealing how the interaction between food and gut microbes contributes to health through the release of bioactives and modulating appetite.
- Establishment of a healthy population of gut microbes in early life.
- Understanding how gut microbes influence organs beyond the gut, including the brain.
- Uncovering how the malfunction of gut microbes contributes to chronic disease.
- Understanding the evolution, emergence and spread of foodborne pathogens and the epidemiology of antimicrobial resistance.
- Developing new forms of therapies that target dysfunctional gut microbes to treat gut-related diseases.
- Longitudinal studies of gut health in the stable, ageing local population harnessing 'omics and Big Data to extend health through the life course leading to stratified therapeutics and nutritics.
- Pioneering innovation in endoscopy and the diagnosis and treatment of diseases of the gut.
- Clinical trials to validate health claims for novel products.
- Working with the commercial sector to ensure translation of our fundamental science to benefit patients, consumers and the wider society.
- The Quadram Institute also houses the UK's national food composition datasets (the foundation of the McCance & Widdowson directory) and the UK's National Collection of Yeast Cultures.



If you are interested in working at the Quadram Institute please register your interest by emailing [recruitment@quadram.ac.uk](mailto:recruitment@quadram.ac.uk)

All commercial enquiries should be sent to [business@quadram.ac.uk](mailto:business@quadram.ac.uk)

For all other information or queries please email [info@quadram.ac.uk](mailto:info@quadram.ac.uk)

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