

Nottingham Hospitals **Charity**
Research Fund



RESEARCH REPORT

Nottingham Hospitals **Charity**
At the heart of your care



**Our vision is an
outstanding NHS for the
people of Nottingham**

We are #Here4Nottingham

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At Nottingham Hospitals Charity we are dedicated to supporting the work of Nottingham University Hospitals NHS Trust (NUH Trust). From stroke services to the children's cancer wards, from cardiac care to breast cancer research, we work alongside the Trust, raising funds to help adults and children across Nottinghamshire and the East Midlands.

NUH Trust is an international leader in innovative, ground-breaking medical research. Thanks to the generosity and commitment of our donors and fundraisers, Nottingham Hospitals Charity has contributed almost £8 million to research at our hospitals over the past eleven years, with one aim in mind: to help save lives and enhance patients' well-being.

Medical research and innovation is at the heart of healthcare. Research is vital to ensure that patients with a diverse range of diagnoses are receiving the best treatment available. Medicine is always developing thanks to the incredible work of scientists and medical researchers, including many at Nottingham's hospitals.

We are proud that patients in Nottingham and beyond will benefit from our Research Fund for many years to come.

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RESEARCH INNOVATION IN NOTTINGHAM

Introduction

Nottingham Hospitals Charity has been supporting research as a key component of our grant-making to NUH Trust since we formed as a charity.

Nottingham is one of the country's most important NHS research centres. We are proud that through our charity we have developed a nationally-significant research programme that actively supports excellence in research. We have achieved this by investing in a variety of funding programmes supporting our talented pool of Nottingham researchers. This includes seed funding to encourage new researchers, supporting experienced clinical teams to carry out research, as well as through the development of our prestigious new Research Fellowships.

Working in partnership with clinical teams

Situated alongside our clinical teams, we have a unique understanding of the importance of research that can translate from the researcher's desk to delivering direct impacts at the patient's bedside. Through this approach we are excellently placed to develop focused, impactful fundraising campaigns such as our Big iMRI Appeal which was launched in 2018.

The iMRI appeal is a partnership with the NUH Trust's paediatric neurosurgery team, Nottingham Children's Hospital and the University of Nottingham's medical research centre. Nottingham is the original home of the MRI and our joint £2.8 million fundraising campaign is providing a state of the art intra-operative iMRI scanner which will be used for both clinical treatment on children undergoing brain tumour surgery and for research into more effective techniques and treatments.

Delivering outcomes

Since 2006, Nottingham Hospitals Charity has funded a total of 146 research projects. As part of this, we have invested almost £8 million and attracted a further £11 million from national grant-making bodies such as the National Institute of Health Research and the Medical Research Council.

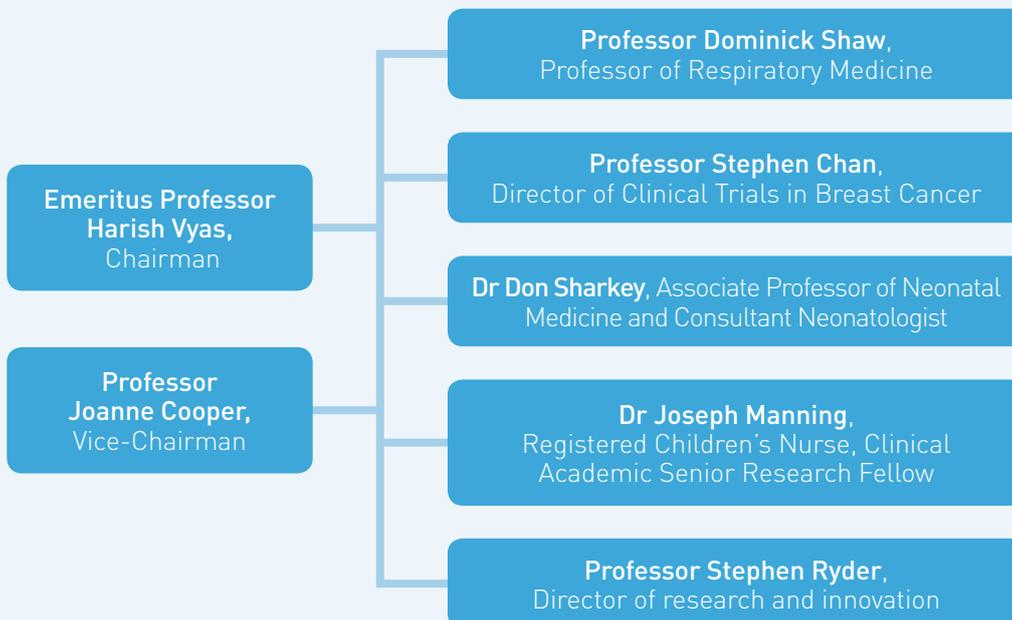
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RESEARCH ADVISORY BOARD

Comprised of some of Nottingham's key specialist researchers, our Research Advisory Board provides the driving force and focus for the Charity's research programme. We are indebted to those who devote their time and expertise as part of the group:

- We recognise Associate Professor Brian Thomson's commitment and contribution to initiating our grant-making programme and chaired the Research Advisory Group from 2007 to 2015;
- We are indebted to Emeritus Professor Harish Vyas, Chairman, Trustee, who has taken on the new Chairmanship following the relaunch of the Research Fund in November 2017, along with Professor Joanne Cooper who is our new Vice-Chairman.

We are grateful for the support and commitment from our current Advisory Board members:



The strength of our Research Advisory Board is underpinned by the fact that we invest in proactively recruiting our members from across the full spectrum of clinical specialities and areas within NUH Trust, thus ensuring that we are working with the brightest and best in clinical research.

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NOTTINGHAM HOSPITALS CHARITY RESEARCH PROGRAMME

Nottingham Hospitals Charity's Research Fellows

Our Research Fellows are the backbone of our research programme. Each Fellow is a leading clinical researcher who has shown the ability to undertake unique and pioneering research programmes. Drawn from a wide range of specialities, our Fellows have made key contributions to the wellbeing, welfare and future outcomes for many thousands of patients in Nottingham and nationally.

Six people currently hold the prestigious "Nottingham Hospitals Charity Research Fellow" title and we are delighted to launch the new **William Colacicchi Fellowship Award** in honour of the Charity's long-serving inaugural chairman. It is awarded to the most successful applicant from across a wide range of clinical research disciplines.

The William Colacicchi Fellowship Award

2018 marks the launch of the first three-year proactively-recruited Fellowship from across Nottingham University Hospitals NHS Trust, named after our inaugural Charity Chairman, William Colacicchi who served and guided the Nottingham Hospitals Charity from 2006 to 2017.

William Colacicchi's chairmanship of the Charity ensured a focus on supporting clinical excellence, and the first William Colacicchi Fellowship is awarded to Dr Sarah Forster for her research into the role of IT in supporting emergency care in NHS Emergency Departments.



The research has been developed in the context of many millions of pounds spent on systems designed to predict which patients need review by a nurse or doctor based on scores generated from routinely collected vital signs observations. Scores are based on retrospective observational data with no measurement of how the scoring systems impact on mortality, hospital system or staff, or how the hospital systems and staff impact the performance of the scoring systems.

Dr Forster's research will examine the statistical performance of the latest National Early Warning Score in the Nottingham inpatient population and in the setting of chronic disease. It will investigate how digital healthcare information could be used to improve the monitoring of patients and help staff understand how future interventions can be used to improve their efficiency.

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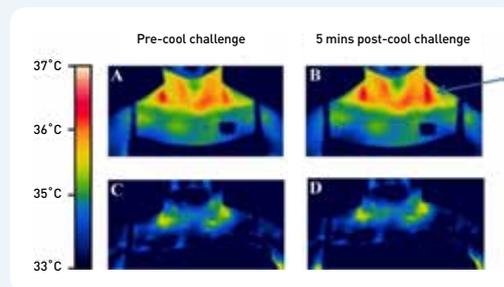
Some of the current research programmes being undertaken by our Research Fellows are outlined below:

Thermal imaging in understanding the roles of fat cells in obesity

The Charity's research funding was used to undertake a series of pioneering studies by Professor Helen Budge and Professor Michael Symonds into the control of brown adipose tissue using thermal imaging. The research team have been able to demonstrate the efficacy of this technique for quantifying brown fat activity which is now seen as a credible target for combatting obesity and diabetes in both children and adults.

Their completed studies have shown that brown adipose tissue activity is much higher in children than adults, its activity declines with increasing body mass index and brown fat is highly sensitive to diet. The research team are now in the process of completing a series of interventional studies designed to assess the potential of environmental and dietary stimuli on their potential to activate brown fat in healthy, over-weight and diabetic participants. These investigations thus have the potential to transform current strategies designed to prevent or treat both obesity and diabetes in children.

Figure 1. Supraclavicular BAT activation (see blue arrow) following exposure to a mild cold challenge in young children – representative thermograms demonstrating the visual differences between lean children (A and B) and obese children (C and D).



The role of Volunteers in supporting dementia care

One in six people over the age of 80 in the UK have dementia, with experts predicting that one million people will be living with the condition by 2025.

Research into the condition is key and with this in mind the Charity granted £100,000 to enable our Healthcare of the Older Person and Staff Nurse, Liz Charalambous, to conduct a three year research programme into dementia support.

Focused on looking at how volunteers can be used to help improve the emotional wellbeing of patients, the study is assessing their impact in allowing clinical staff to focus on patient care outcomes and support for their carers in managing their condition.

In recognition of the impact that Liz Charalambous has had, she has recently been recognised as a finalist in the Helpforce Award for 'Outstanding Staff Champion of Volunteers'.

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DRIVING INNOVATION, GENERATING SEED FUNDING

Supporting clinical consultants in the pursuit of innovative research is what drives innovation in patient care. It also provides an important avenue of seed funding, unlocking further resources from key regional and national bodies which can be invested in the work of our Nottingham researchers.

Across the spectrum of our funding programmes – from asthma to eczema, dementia to diabetes and from cancer to cardiac research – Nottingham Hospitals Charity has invested almost £8 million which has unlocked a further £11 million of seed funding for our research teams. This direct and very visible investment is ensuring that our Nottingham clinicians can stand shoulder to shoulder with medical research teams across the country.

Locally we support some of the many talented teams and leading researchers who are at the very forefront of pioneering research.

Research into non-alcoholic liver disease – Professor Guruprasad Aithal

Professor Aithal's research looked in to the telomerase activity as a measure of cumulative burden of oxidative stress in non-alcoholic fatty liver disease.

Telomeres are the ends of chromosomes which protect them from degradation. They gradually shorten as cells age naturally, but telomere shortening and premature senescence also occurs as a result of the damage in chronic liver disease.

The research investigated whether measurement of telomere length can indicate accelerated ageing of liver tissue. Although telomere length in liver cells is linked to disease, the research found that telomere length in blood cells was not a reliable way to monitor liver disease.

This project has been further developed by researchers in Nottingham looking at different substances linked to cell ageing which may indicate that cancer is likely to develop. These are being evaluated as possible blood tests to diagnose and monitor liver disease.



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Chronic Asthma – Research by Professor Alan Knox

Chronic asthma is an important cause of suffering and death and costs the NHS £2 billion each year.

Professor Knox's research focused on the muscle cells in the airway which are important in causing airway spasm and inflammation in asthma. The research looked at the processes in the airway cells, to analyse which might be targets for new asthma treatments.

Through laboratory experiments on smooth muscle cells obtained from bronchoscopic biopsies of the airways taken from asthma sufferers, the research team were looking to discover proteins that might provide new targets for asthma treatments. As part of their research they found that two proteins, TERT and PINX1, played key roles in regulating inflammation in airway smooth muscle cells in asthma. These proteins have now provided targets for the development of new medicines for the treatment of asthma.

Breast Cancer – Research by Professor Stephen Chan

Nottingham's hospitals benefit from pre-eminent researchers such as Professor Stephen Chan and his team at the Nottingham Breast Institute.

Funding from Nottingham Hospitals Charity is enabling them to develop research programmes that help individualise treatment, as well as extend and save the lives of patients.

Recent Nottingham Hospitals Charity funding of £184,000 has helped Professor Chan and his team develop a method for determining whether individual patients' tumours will respond to chemotherapy. The ultimate aim of the project is to enable clinicians to tailor their patients' care, avoiding unpleasant side effects from unnecessary forms of treatment.



Eczema in babies – Research by Professor Hywel Williams

Eczema affects around one in five children and adults and there is no cure for it.

In order to provide options for managing eczema, Professor Williams and his team developed the first phase of the Barrier Enhancement for Eczema Prevention (BEEP) trial. The BEEP trial was set up to ascertain whether moisturising babies during their first year can prevent eczema from developing.

The research team needed to know which moisturisers were safe to use in the trial. Thirty-seven volunteers applied moisturisers to their forearms then underwent non-invasive tests. All tests showed that the moisturisers that the research team had identified delivered no negative effects on the skin barrier and were suitable for using in the BEEP trial. This pilot has now enabled the BEEP trial to commence its main phase and the first results will be available in 2019.

Renal research – Dr Mark Devonald and research into acute kidney injury

Acute Kidney Injury (AKI) is a rapid deterioration in someone's kidney function and is a common occurrence in 10-20% of patients admitted to hospital. The Charity has funded a wide range of renal research by Dr Devonald and his team, looking at improving diagnosis and patient care.

In the most challenging cases kidney failure can be a result, leaving the patient requiring life-long dialysis and kidney transplant. Across the country this costs the NHS more than £1 billion per year.

AKI is often preventable or treatable with simple measures if patients are identified early enough. Originally no reliable test was available for detecting the early stage of kidney damage. Dr Devonald and his team identified two minerals in urine that increase within an hour of kidney damage. Their Charity-funded research has enabled them to design and run a series of studies to support the identification and management of kidney damage.

Neonatal preterm infant transport programme – Dr Don Sharkey, Associate Professor of Neonatal Medicine and Consultant Neonatologist

In the UK there are about 16,000 ambulance journeys every year in which a newborn baby is transported between hospitals. This allows them to access specialist care especially if they are very sick, such as babies who are at risk of brain damage or very premature babies. Although this allows the highest risk babies to receive the best care, it does unfortunately expose them to an additional care pathway in the form of the ambulance transfer and this has its own risks.

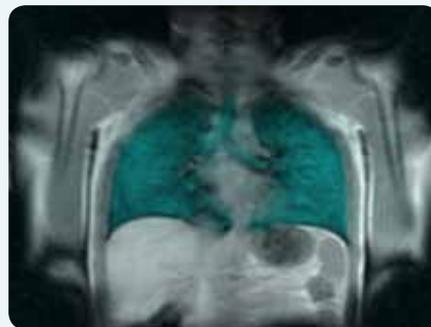
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These transfers expose the babies to high levels of noise, vibration, handling and temperature changes often at a time when they are most sick and these transfers have been associated with a worse outcome for babies. Funding from Nottingham Hospitals Charity allowed Dr Sharkey and his team to test the amount of vibration and noise these babies were exposed to.

This has resulted in new scientific publications and over £1.2 million of funding to develop a new transport incubator in which babies can be transferred much more safely.

Respiratory research in lung imaging – Professor Ian Hall: Study of lung imaging

Lung disease affects nearly 1 in 5 people in the UK. Hyperpolarised xenon-129 MRI is a relatively new technique that lets doctors see how well the lungs work and how oxygen gets around the lungs and into the blood. The scan only takes 10 seconds to complete. It does not require injecting a dye as patients instead breathe in a special gas (xenon). There is no radiation involved either.



In this pilot study Professor Hall and his team have scanned healthy people and they have reported no side effects. This research has allowed the team to now take the next step which will be to scan patients with lung disease, such as emphysema, giving them the benefits of this innovative approach.

Surviving stroke – Professor Avril Drummond

Pre-discharge home visit assessments are conducted by occupational therapists (OTs) to assess stroke patients' abilities and identify safety issues. However, these are costly and time consuming. Professor Drummond and her team investigated whether an existing on-line computer programme could be modified to enable OTs to conduct virtual pre-discharge home visit assessments and whether OTs and their stroke patients found this acceptable.

The pump-priming award enabled the team to gather data to support a successful application for a post-doctoral fellowship to the Stroke Association. This fellowship enabled Professor Drummond and her colleagues to conduct further pilot and feasibility research which, to date has resulted in three publications about their work.

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Brain tumour research into chemotherapy for malignant brain tumours – Professor Richard Grundy

Professor Grundy and his team developed a self-assembling and biodegradable polymer paste called PLGA/PEG, which can be moulded onto the surgical cavity created by brain tumour surgery. The paste can deliver chemotherapy at close proximity to the brain cancer cells left behind after surgery. With generous funding from the Nottingham Hospitals Charity the team developed this chemotherapy paste and showed its effectiveness.

More recently Professor Grundy's team have collaborated with a world-leading research group at the Johns Hopkins University, Baltimore, USA and shown that delivery of a combination of drugs (etoposide and temozolomide) using PLGA/PEG paste, leads to a significant survival benefit for aggressive brain tumours called high-grade glioma.



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SUPPORTING RESEARCH EXCELLENCE

Our donors are key partners in ensuring Nottingham Hospitals Charity can deliver world class research projects and outcomes in Nottingham.

Finding the perfect match

Our donors are essential to the success of our research programmes within Nottingham's hospitals. Working in partnership with donors we have a track record of constructing research teams around specific donations and legacies. By taking this enlightened, dynamic and tailored approach to matching researchers to research funders we continue to achieve great outcomes for research in Nottingham.

Partners in delivering great research

Some of our most impactful research programmes are the results of carefully matched and structured partnerships. Current examples include the following:

A family legacy – the Bethell Haematology Research Fellowship

The Bethell Haematology Research Fellowship is a lasting legacy supporting blood cancers. Approximately 5,500 patients are diagnosed with multiple myeloma in the UK each year. The disease is incurable, with treatment aiming to slow progression, alleviate symptoms and improve quality of life. This project aims to contribute to identifying appropriate therapies that may target specific groups of myeloma patients and will ultimately improve outcomes for them.

The Bethell Haematology Research Fellowship is the result of a legacy from a grateful family, with over £500,000 going to fund the Research Fellowship focused on those facing multiple myeloma. Based at City Hospital, the Haematology Department's Day Case Unit is named after the legator in recognition of the family's contribution and support.

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Diabetes research funding

Diabetes affects almost 400 million people worldwide and just under 5% of the UK population. It is typically irreversible and its complications cause decreased life expectancy and major medical, social and financial burdens.

Neuropathy is a common complication of diabetes. It most often manifests as a symmetrical sensory neuropathy affecting the lower limbs, but may also cause isolated motor neuropathies, cranial nerve palsies and affect the autonomic nervous system.

This research study uses non-invasive, painless MRI of the spinal cord for the earliest detection and monitoring of diabetic neuropathy, and takes advantage of the unique high field imaging expertise in Nottingham, the reputed team of diabetes specialists and the large, multidisciplinary clinics.

This three year study has been funded through a £350,000 legacy from a lady called Hilda Lees, for whom we are most grateful.

Pioneering innovation – the Dutton Oncoplastic Research Fund

The Dutton Oncoplastic Research Fund supports the life-changing work of Nottingham Hospital's Consultant Surgeon Mr Douglas MacMillan in developing oncoplastic breast reconstruction for women who face mastectomies following breast cancer. The donation of over £280,000 has funded a five year research programme focused on assessing breast reconstruction options and impacts, including psychosocial effects.



AN UNRIVALLED TRACK RECORD OF RESEARCH IN NOTTINGHAM

Over the last decade Nottingham Hospitals Charity has set the standard for an unrivalled track record of funding for some of the most wide-ranging and impactful research projects across the region. The research we have funded ranges from projects covering Chronic Pulmonary Obstructive Disorder, pancreatitis pain management, through to colonic function and research into continence problems among older people.

The research projects listed below are the 146 grants we have directly supported with over £1.3 million of seed funding:

2008 Charity-funded research projects

Fiona Broughton-Pipkin – The measurement of individual components of the renin-angiotensin system £4,996

Fiona Broughton-Pipkin – Provide proof of principle investigating the role folate in the onset of pre-eclampsia £4,994

2009 Charity-funded research projects

Jonathan Corne – Rapid screening of serum samples for COPD using a novel protein array technology £8,100

Peter Lanyon – Production of micro-scale screening arrays for detection of anti-citrullinated protein autoantibodies to improve early disease diagnosis and future monitoring in Rheumatoid Arthritis and systemic inflammatory conditions £7,375

Kenneth Mellits – A Biobank of patients suffering from Campylobacter jejuni gastroenteritis £10,042

David Baldwin – The use of metabolomics to develop a biomarker for the early detection of lung cancer £9,800

Jacqueline Randle – Improving children's and their visitors' hand hygiene compliance £11,636

Bryn Baxendale – The translation and implementation of mandatory service change: a formative evaluation of the NPSA Safe Surgery Live Checklist £10,000

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Bernard Schoonakker – Determination of how adsorption of insulin onto administration sets influences insulin delivery to sick neonatal patients £9,798

Sue Watson – Establishing a molecular profile which links to a translational screen of therapeutic response to newly emerging class of anti-cancer agents in colorectal metastasis to liver £9,800

George Bugg – To investigate the placental vessel type identified by 3D Power Doppler Angiography within the placenta of normal pregnancies and those complicated with pre-gestational diabetes £2,600

Mark Devonald – Investigation of the risk of chronic kidney injury following an episode of acute kidney injury in the intensive care unit £10,000

Guruprasad Aithal – Identification of Biomarkers for the prediction and early diagnosis of anti-tuberculous drug-induced liver injury £9,616

Philip Bath – Rapid Intervention with GTN in Hypertensive stroke trial (RIGHT) £9,038

John Hammond – Characterising Kupffer cell activity in health and disease: the role of the innate immune response in liver regeneration after partial hepatectomy £7,540

Andrew Fogarty – What are the risk factors for allergic disease in Cuba: a society in transition? £10,000

Indra Neil Guha – The assessment of a functional biomarker to detect gastro-oesophageal varices in liver cirrhosis £9,500

W L Irving – Does the addition of metformin to standard combination therapy increase sustained response rates for patients with chronic hepatitis C virus infection? £8,000

Alan Knox – Effect of β_2 -agonists on myofibroblast differentiation in idiopathic pulmonary fibrosis £9,950

Steve Chan – A study of neo-adjuvant therapy in high-risk localised early breast cancer in Nottingham and Mansfield: Prediction of response to therapy and neo-Nottingham Prognostic Index £16,000

Nikos Evangelou – Optimisation of T2*-weighted MRI at clinical field strengths for improving diagnosis of Multiple Sclerosis £9,925

Martin W James – Effect of probiotics on bacterial translocation and incidence of spontaneous bacterial peritonitis (SBP) in cirrhotic patients with ascites £9,750

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2010 Charity-funded research projects

Rhodri Jones – Development of Protocols for Processing Mesenchymal Stem Cells for Patient Therapy in the Clinical Tissue Laboratory at NUH £10,000

Mark Batt – Predicting Patient Outcomes – the development of a patient-based Functional Movement Score to assess ‘motor intelligence’ £8,484

Alastair Simpson – A systematic review of treatments for preoperative anaemia £1,150

Don Sharkey – Development of a non-invasive systemic perfusion monitor for critically sick children and newborns £9,530

Helen Budge – Influence of maternal overweight, obesity and gestational diabetes on placental pro-oxidative status – A pilot study to examine the role of sirtuins £8,400

Dileep Lobo – Modeling Chemotherapy Associated Steatohepatitis (CASH) in a Microfluidic Primary Human Liver Culture System £9,920

Ian Daniels – Does the therapeutic monoclonal antibody rituximab induce a long-term immune response in patients with B-cell Lymphomas £9,270

Mark Fox – Assessment of gastric motor and sensory function following a large test meal by scintigraphy, magnetic resonance imaging and a nutrient drink test in patients with functional dyspepsia £9,700

Rob Dineen – The Imaging of Depression in Multiple Sclerosis (IDIoMS) Pilot Study £9,980

Opinder Sahota – Effects of ageing and vitamin D deficiency on Vitamin D Receptor (VDR) in skeletal muscle £9,600

Tash Masud – The effectiveness of the Nintendo Wii in the delivery of exercise in falls prevention classes for older adults: a feasibility study £10,000

Suha Deen – Chemokines Gradient Contributes to Metastatic Spread of Epithelial Ovarian Carcinoma £3,600

John Simpson – The aetiology of pain in chronic pancreatitis £9,825

Ruth Murphy – Feasibility study for a multicentre clinical trial studying treatments for vulval erosive lichen planus £9,640

Melanie & Mark Ferguson – Brassington Evaluation of benefits from motivational engagement in first-time hearing aid users £5,272

Nick Raine-Fenning – Randomised, controlled study of hysteroscopic metroplasty for women with a septate uterus and a history of miscarriage or preterm labour: part of the Sytematic Evaluation of the Prevalence and Treatment of Uterine Malformations (SEPTUM) studies £9,275

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Judith Christian – Prevalance of high risk Human Papilloma Virus in patients with Squamous Cell Carcinoma of the Oropharynx and its impact on clinical outcomes £10,000

Catherine Brewin – A national survey of OT to identify practice for hip precautions following total hip replacement £9,973

Helen Budge – Optimising early parental nutrition is tolerated by, and improves outcomes in, infants born extremely preterm £9,990

Nick Jones – Production of a nasal polyp tissue microarray to investigate the role of immunoglobulin free light chains as mediators of allergic responses involved in nasal mucosa remodelling £10,000

Tracey Twomey – A pilot study to explore the experiences of congenitally profound deaf candidates who receive cochlear implants as adults £3,137

2011 Charity-funded research projects

Luca Marciani – A new MRI “stress test” for colonic function in laxative-resistant constipation £9,560

Richard Ingram & Emily Staples – Towards a diagnostic test: which patients infected with Helicobacter Pylori are predisposed to develop, or are protected against, stomach cancer? £7,461

Srinivasan Madhusudan – Evaluation of a serum biomarker test to predict response to chemotherapy in oesophago-gastric cancer patients £10,000

Simon Johnson & Imran Haq – Identification of novel biomarkers in Lymphangioliomyomatosis £9,700

Pip Logan – An evaluation of the community and hospital in research intervention: proof of concept study £9,856

Des Powe – Investigating prognostic and predictive biomarkers for prostate cancer: selected using a novel bioinformatic and a biologic mechanism approach £9,793

Abhik Mukherjee – Optimisation of the estimation of lymphovascular invasion in early primary breast cancer patients for routine clinical use £10,000

Paul Matthews – Specialist therapeutic care as an alternative to surgical intervention for those with osteoarthritis £9,000

Andrew Fogarty – The development of point of care diagnostics suitable for use with children who have malaria £9,000

Mohammad Ilyas – Gene sequencing to help predict responsiveness to chemo-radiotherapy drugs in people with colorectal cancer £9,000

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Helen Spiby – Research to assist Midwives' beliefs who support women in early labour £7,992

Sarah Goldberg – Research looking at continence problems amongst older people admitted to hospital with dementia £9,000

Heather Fortnum – Speech perception in middle aged people and its relation to noise exposure, tinnitus and cognitive function £7,500

Joanne Cooper – Improving the care of patients with palliative oesophago-gastric cancer £9,000

Richard Grundy – Adjuvant chemotherapy for malignant brain tumours delivered via a novel intra-cavity PLGA/PEG sintering polymer £9,000

Krishna Varadhan – Effect of preoperative anabolic drugs on muscle insulin resistance following major abdominal surgery £9,000

James Catton – The effects of an intensive nutritional support programme on body composition, insulin resistance and clinical outcomes during neoadjuvant chemotherapy for Oesophagogastric Cancer: A before and after pilot study £10,000

Hywel Williams – A functional mechanistic study of the effect of emollients on the structure and function of the skin barrier £8,800

Ira Pande – Bone health in Compensated Cirrhosis – The Compensated Cirrhosis Cohort Nottingham Study £12,000

K Jayaprakasan – Efficacy of Dehydroepiandrosterone medication to overcome the effect of ovarian aging £10,000

2012 Charity-funded research projects

Catherine Vass – Survey of footwear in Elderly Patients £9,336

Mark Fox – Clinical application of novel non-invasive studies of digestive function in patients with dyspeptic symptoms £12,000

Srinivasan Madhusudan – Analysis of lymphatic and blood vessel invasion in early stage oesophageal cancer for improved patient prognosis £8,000

Lucy Fairclough – Early diagnosis of Chronic Obstructive Pulmonary Disorder using novel autoantibody microarrays £8,290

Steward Martin – Use of Calpain in acute myelogenous leukaemia and the role of calpastatin £5,750

Vincent Crosby – Study into whether body composition can help identify the optimal dose of chemotherapy in patients with lung cancer £2,130

Roshan das Nair – Comparing individual versus group psychological adjustment interventions for people with multiple sclerosis £10,992

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Des Powe – Development of a beta-adrenergic receptor mutation detection assay which is a tool for determining mutation frequency and predicting disease progression in breast cancer £9,239

Helen Budge – Development and evaluation of an online, multimedia parenting intervention to promote motor development in pre-school children born very preterm infants £9,738

Mark Devonald – Investigation of micronutrient loss in patients with acute kidney injury requiring renal replacement therapy £9,000

Ian Gaywood – Patient engagement and complex treatment decisions in RA- what do patients need to know and how do we tell them? £7,894

Avril Drummond – An education programme for assessing risk in stroke patients' homes £9,973

Helen Budge – Study into the use of Imaging of brown adipose fat tissue using Magnetic Resonance and Thermal Imaging £6,000

Guruprasad Aithal – Telomere length and telomerase activity as a measure of cumulative burden of oxidative stress in non-alcoholic fatty liver disease £8,260

Shalini Ojha – Analysis of abdominal adipose fat tissue in children £2,975

James Law – A case-control study of brown adipose activation in children with Type 1 diabetes, hypothyroidism or hyperthyroidism £8,950

Alan Perkins & Vidhiya Vinayaka-Moorthy – Clinical PET-CT imaging of hypoxia using [18F]HX4 £22,500

2013 Charity-funded research projects

Don Sharkey – Pre-term infant transport street (PremiTranS) pilot study £11,050

Julie McGarry – Effective identification and management of domestic abuse within Emergency Department settings £8,675

Tanya Monaghan – A study into the colonization by *C. difficile* amongst adult inflammatory bowel disease (IBD) patients £9,900

Melanie Ferguson & Mark Brassington – The development and evaluation of interactive educational audio-visual materials to enhance communication £9,997

Maria Matthews – Motivations and barriers towards lifestyle change and characteristics of Non-alcoholic Fatty Liver Disease (NAFLD) patients £10,110

Mat Daniel Research into what is important to parents of children with glue ears? £2,000

Ian Hall – Pilot study on functional magnetic resonance lung imaging using inhaled hyperpolarised ¹²⁹Xe £10,000

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Joseph Manning Development and evaluation of re-usable learning objects (RLOs) to support the psychosocial well-beings of carers of children diagnosed with cancer £9,998

Luca Marciani – Effect of gluten content of bread on gastrointestinal symptoms: an MRI study £9,730

Helen Henshaw – Identifying treatment uncertainties for mild-moderate hearing loss from the perspective of patients and clinicians: A James Lind Priority Setting Partnership £14,335

Helen Spiby – Womens' expectations and experiences of membrane rupture prior to and in early labour at term £9,560

Rob Dineen – Hippocampal dysfunction as a mechanism for cognitive deterioration following breast cancer chemotherapy – a pilot study £9,920

Shiu Soo – A prospective study of Enterobacteriaceae colonisation of nasogastric feeding tubes, its contribution to neonatal bowel flora, late onset healthcare associated bacteraemia in premature/low birth weight infants on neonatal intensive care units, and investigation of the healthcare environment, formula feed, and fortifiers as potential sources of contamination £9,922

Monica Pallis – A study into whether BH3 profiling can predict a patient's responsiveness to chemotherapy for those who have acute myeloid leukaemia £6,350

Katie Robinson – Testing the Principles of a Chair Based Exercise (CBE) Programme: A proof of concept study £9,038

2014 Charity-funded research projects

Don Sharkey – A live feedback monitoring system to improve oxygen saturation targeting in premature infants £8,520

Nikola Sprigg – Visual impairment after stroke; Assessing priorities and acceptability of emerging technologies to improve outcome £9,993

Antonella Ghezzi – Assessing nutrition through observation in early cirrhosis of the liver (ANTO) study £10,499

Pippa Hemingway – Can we reduce Children's Emergency Department attendances? Analysis of parents' decisions having chosen the Emergency Department for children aged 0-5 years with non-urgent medical complaints £9,980

Michelle John – Physical activity and cardiovascular risk in patients with COPD £7,366

Des Powe – Arresting adrenergic receptor mediated prostate cancer progression: a role for adjuvant novel Adrenergic Receptor Inhibitions (ARIs) £9,108

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Dominick Shaw – A study into supporting patients to navigate their way within large hospitals, such as Nottingham £20,000

Joanna Stephens – Stratifying risk of gastric adenocarcinoma in Helicobacter pylori infected patients: development of a non invasive test £5,892

Paul Maddison – Body composition measurements and functional impairment in myotonic dystrophy type 1 £7,000

Emad Rakha – Determining oestrogen receptor (ER) positivity in breast cancer when assessed on core biopsy using immunohistochemistry £10,000

Angus Wallace – The effect of Teriparatide (rPTH) on accelerating the healing of osteoporotic ankle fractures in elderly patients – A Pilot Study £10,138

Mohammad Ilyas – Using cfDNA (liquid biopsy) to monitor treatment response in patients with colorectal cancer £10,000

Elaine Bellamy – Comparison of the effectiveness of a hydrogen peroxide misting whole room disinfection system (ASP Glossair) against manual disinfection methods using sodium hypochlorite against Vancomycin Resistant Enterococci (VRE) in a clinical environment £2,827

Hari Ratan – Determine new markers of prognosis in African-heritage men with prostate cancer £9,900

Gordon Moran – Reduced intestinal motility in inflammatory Crohn's disease – optimisation studies in healthy volunteers £10,000

Laila Tata – To what extent are women with asthma receiving optimal clinical management during pregnancy? £15,402

Denis Walsh – Womens' experiences of being 'overdue' in pregnancy £9,483

N Evangelou – Star-MS Study: single test to arrive at MS diagnosis. A pilot study to test new MRI test in predicting Multiple Sclerosis in cases of diagnosis uncertainty £12,000

N Evangelou – Assessing the use of non-standardised, routine, clinical MRI scans in MS research and clinical practice £10,000

Heather Buchanan – Helping parents with chronic kidney disease talk to their children: exploring parent-child communication about kidney disease and developing support resources £9,805

David Walker – Understanding language dysfunction in survivors of childhood posterior fossa tumour £10,000

Rob Delahay – The contribution of a novel virulence factor of helicobacter pylori to gastroduodenal disease outcome £8,920

Robert Kerslake – Development of a concise muscle MR imaging and analysis package £7,457

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2015 Charity-funded research projects

Dominick Shaw – Improved identification of lung infection; a pilot study £15,200

Kris Inkpin – Development of a novel ‘steerable’ bougie to assist in difficult airway management £10,062

Robert Scott – 2x2 Crossover Study Design – Apply and develop MRI techniques to characterise the changes in the small bowel associated with permeability under normal and positive control conditions in healthy volunteers (GerMinH) £10,000

Helen Budge – A study of Adiposity in infants of mothers with diabetes £10,000

Rachael Murray – Maintaining activity in patients with COPD after rehabilitation (MAC) a feasibility study £11,162

Michelle Hall – Feasibility of a mindfulness-based intervention for patients with Osteoarthritis (OA) related knee pain £12,934

Gordon Moran – An assessment of muscle function in Crohns disease £10,000

Rob Dineen – Novel quantitative MRI versus amyloid PET biomarker of dementia £10,000

Linda Fiaschi – Assessment of Hyperemesis Gravidarum clinical management in secondary care settings £19,924

Ian Sayers – Targeting the Urokinase Plasminogen Activator Receptor (uPAR) in asthma £10,000

Sarina Iwabuchi – The feasibility of using magnetic stimulation to treat resistant depression £15,600

Holly Blake – Development and evaluation of a prototype for an online multimedia intervention to promote physical activity in children with type 1 diabetes £10,000

Robert Pierzycki – Tinnitus effect on device programming and speech outcomes in cochlear implant users £5,686



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2017 Charity-funded research projects

R Simpson – Improving the diagnosis of recurrent DVT £9,556

Don Sharkey – Reducing adverse noise exposure in the neonatal unit a feasibility study £10,029

Neil Guha – Nottingham non-alcoholic fatty liver disease longitudinal cohort study (NoNALCS) £10,986

Y Mahida – Feasibility studies to investigate the role of ursodeoxycholic acid in the prevention of recurrence of *C. difficile* infection £9,642

A Sharif – EGFR testing on cfDNA in Non-Small Cell Lung Cancer (NSCLC) £7,000

S Samuel – Serum Oncostatin M (OSM) levels to predict colectomy in patients with acute severe ulcerative colitis (ASUC) £4,743

J Chalmers – A James Lind Alliance Priority Setting Partnership in pemphigus and pemphigoid to identify and prioritise unanswered research questions for patients, their carers and clinicians £9,942

E Rakha – Intra-operative spectroscopic sentinel lymph node evaluation in breast cancer £10,000

A Aravinthan – Prognostic Utility of serum of hepatocyte senescence in liver disease £9,991

S Thomas – Physical Activity as an intervention for children with acquired brain injury, brain tumours and neurological Conditions £5,579

H Pick – Recovery in Community-acquired Pneumonia: an exploratory study £4,460

M Ferguson – The development and evaluation of decision aids for people seeking help with hearing loss and their communication partners £9,450

2018 Charity-funded research projects

Karine Latter – Development of a re-usable learning object for parents of infants with Pierre Robin Sequence £9,147

Louise Bramley – A study to assess the feasibility of using Nervecentre & eRostering data to investigate associations between nurse staffing, missed nursing care, and patient outcomes, including mortality, in older patients £9,586

Abby Hunter – Identifying research uncertainties in the use of electronic cigarettes for smoking cessation and harm reduction from the perspective of patients and clinicians: A James Lind Alliance Priority Setting Partnership £15,650

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HOW TO MAKE A GRANT APPLICATION

Nottingham Hospitals Charity's competitive programme whereby researchers can apply for research funding has been pioneered here at NUH Trust. There are currently few means of obtaining entry level funding for proof of concept feasibility studies and this scheme helps to increase the chances of applicants' success in winning competitive external funding.

Applications are accepted from clinical staff employed by Nottingham University Hospitals NHS Trust, for research projects from Nottingham Hospitals Charity Research Fund.

The scheme aims to provide entry level grants for research projects by giving early studies pump-priming to get them up and running. We expect projects to be high quality with the aim to benefit patients within three to five years.

The scheme runs twice a year, with up to £200,000 available per annum. It is expected that this amount will fund several small projects of up to £10,000 each, but larger awards may be given to exceptional projects and there is no formal upper limit.

To download an application form you can go to the link provided on the Charity's website via www.nottinghamhospitalscharity.org.uk

THANKS TO OUR DONORS

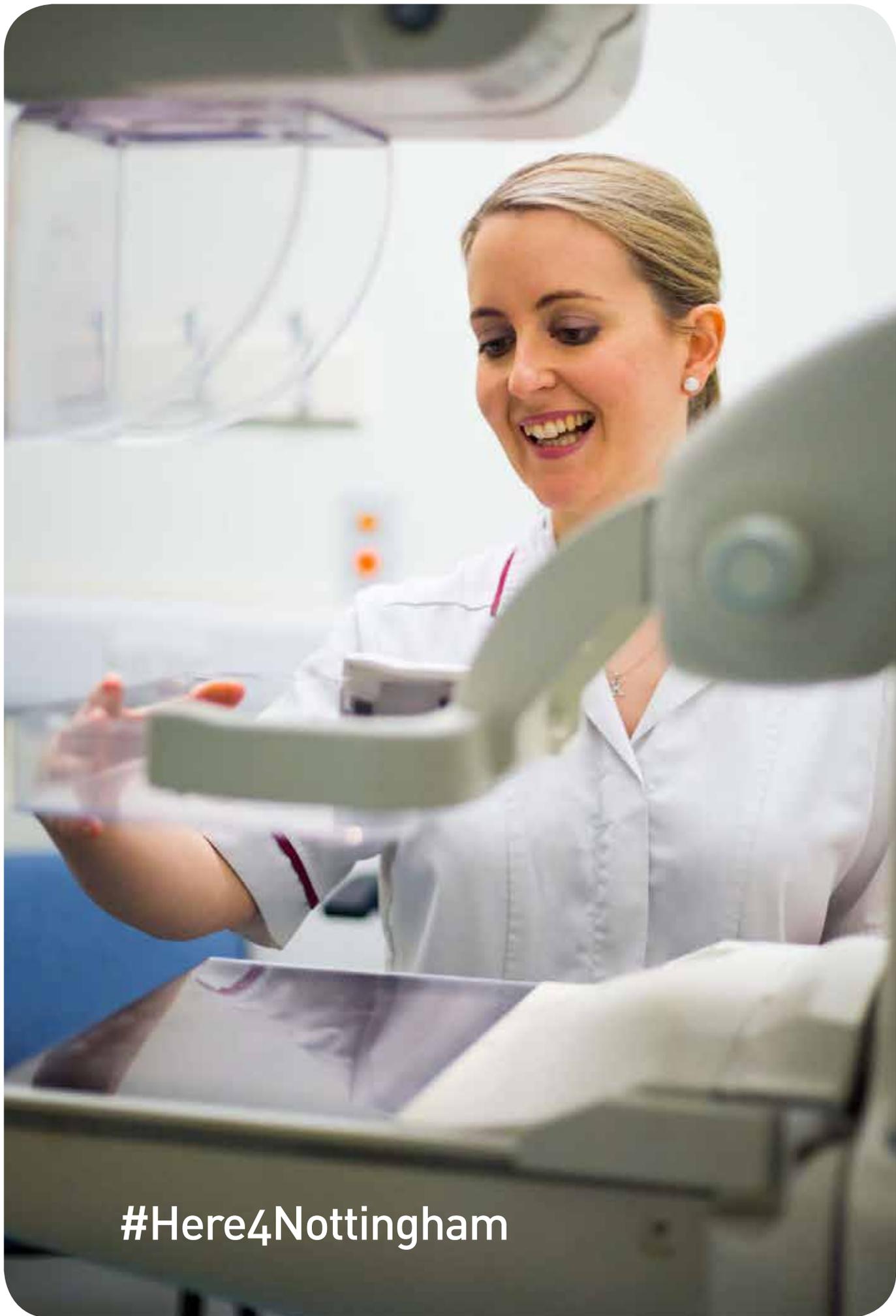
The pioneering research and innovation highlighted in this report is only possible because of the continuing and generous support from our valued donors.

On behalf of Nottingham University Hospitals NHS Trust's doctors, consultants and other research teams we would like to take this opportunity to say thank you.

And from all the team at Nottingham Hospitals Charity, the Research Fund Board and all who have benefitted from the funding opportunities, we want to say that your support has helped us improve and transform the lives of thousands of children and adults in our hospitals.

Thank you.

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