The appliance of science:
using reverse engineering to improve the
treatment of childhood brain cancers

Presented by the School of Chemistry and School of Physics and Astronomy
in association with the British Science Association

Professor David Walker and Professor David Needham
Children's Brain Tumour Drug Delivery Consortium

Thursday 20 June, 6pm
B1 Physics Building, University Park Campus

Free. All welcome.

Find out more: nottingham.ac.uk/go/sci-lecture
The Children's Brain Tumour Research Centre (CBTRC) was established in 1997 at The University of Nottingham. It brings together a multidisciplinary team of healthcare professionals and researchers. The aim of the centre is to improve the understanding, treatment and outcomes of children and young adults who develop brain tumours.

The CBTRC has around 40 core staff, including both University and NHS researchers. We're dedicated to helping children who are diagnosed with brain tumours, both now and in the future.

**Research Themes**
- Advanced Magnetic Resonance Imaging
- Avoiding Harm
- Molecular Neuro-Oncology
- Drug Development and Delivery

http://www.cbtrc.org/research-themes/research-themes.aspx
Children's Brain Tumour Drug Delivery Consortium

The consortium was born from a strong need for sharing knowledge and expertise within the area of childhood brain tumour drug delivery, in order to make significant headway in this challenging area. As such, it is vital that we engage with all interested stakeholders.

http://www.cbtddc.org/cbtdd-consortium.aspx
The damage to a developing child’s brain caused by brain tumours and their treatment carries an immense burden - two thirds of those cured will be disabled for the rest of their lives.

Research addresses the need to diagnose tumours earlier, so that treatment will be more effective and side effects less severe with a view to minimising damage and developing interventions that can reduce the disability burden for survivors.

http://www.cbtrc.org/research-themes/lowimpactssurgery.aspx
School of Pharmacy, Nottingham

We train the Pharmacists of the future and are recognised for research in the design and use of drugs and medicines.
We are ranked 8th in the world in the 2019 QS World Rankings for pharmacy and pharmacology.
The School came joint 1st in the UK on quality of research for Pharmacy Schools in the 2014 Research Excellence Framework and is the only School of Pharmacy to have 100% of research at 4* in the 'Impact on Society' category.

https://www.nottingham.ac.uk/pharmacy/
Duke School of Engineering

Engineering in Service to Society
Duke Engineering is dedicated to creating high-impact solutions to grand challenges facing society and the environment. Through local and global partnerships, our faculty and students reach out to share our research discoveries, engineer practical solutions to community needs and encourage the next generation of students to pursue careers in engineering and other STEM fields. Explore our service activities below, and contact us to learn more.

https://pratt.duke.edu/
Duke Cancer Institute

Duke Cancer Institute is a collaborative powerhouse—audacious, evolving, unconventional—at the center of a world-renowned university and medical center. We unleash the power of synchronous collaboration to create breakthroughs that rapidly transform the unimagined into the possible—to fuel a pace of discoveries and advances previously thought impossible.

http://dukecancerinstitute.org/
The Consortium for Canine Comparative Oncology (C3O) is a collaboration between the Duke Cancer Institute and North Carolina State University College of Veterinary Medicine. Duke and NC State have joined forces to further explore new cancer therapies offering better efficacy and less toxicity for both humans and canines. Researchers at both institutions are studying naturally occurring cancers in humans and canines and this collaboration will allow investigators to leverage research and resources to benefit both species, ensuring better treatments and outcomes.

https://www.c3oncology.org/
Cancer Research UK

We beat cancer

We fund scientists, doctors and nurses to help beat cancer sooner. We also provide cancer information to the public.

- Read about our research
- Get information about cancer

We raise money

Every step we make towards beating cancer relies on every pound donated.

- How your support helps
- Do your own fundraising

We develop policy

Our policy development team develops evidence-based policy to inform Government decisions related to cancer and research.

https://www.cancerresearchuk.org/
Cancer Statistics for the UK

Cases

363,484

New cases of cancer, 2014-2016 average, UK

Deaths

163,444

Deaths from cancer, 2016, UK

Survival

50%

Survive cancer for 10 or more years, 2010-11, England and Wales

Preventable cases

38%

Cancer cases are preventable, UK, 2015

https://www.cancerresearchuk.org/health-professional/cancer-statistics-for-the-uk
Brain Cancer Statistics CRUK

Prevent Breast Cancer (ex-Genesis)

Prevent Breast Cancer is the only UK charity funding ground-breaking research solely aimed at preventing breast cancer for future generations.

Predict. Prevent. Protect. You

Our Vision
To prevent breast cancer for future generations through preventative testing, screening, lifestyle changes and drugs where needed.

We seed-fund medical research projects into the prediction and prevention of breast cancer – without our original funding these research projects would not happen. Furthermore once the projects have been undertaken, they can often support large grant applications to organisations such as The National Institute of Health Research.

https://preventbreastcancer.org.uk/
Celsion Corporation

ThermoDox®
Enhancing the efficacy of doxorubicin with heat-activated liposome technology

Learn More

http://celsion.com/