

FutureNeuro - Centre for Chronic and Rare Neurological Diseases

The mission of FutureNeuro is to advance research into the genetic contribution to neurological disease and drive the development of precision molecular therapeutics - specifically where the disease is treatment resistant. The Centre will deploy an integrated e-health infrastructure for improved patient journey and to accelerate research discoveries.



Research Areas

- › Connected Health
- › Diagnostics/Biomarkers
- › Electronic Patient Records
- › Epigenetics
- › Human Genetics
- › Neurology
- › Neuroscience and Behaviour
- › Pharmacogenomics
- › Precision Medicine
- › Sensors and Monitoring
- › Therapeutics

Research Programmes

FutureNeuro uniquely combines three thematic areas of Diagnostics, Therapeutics and E-Health, mapped closely to targeted projects with our industry partners to leverage and create exceptionally strong synergy between basic, clinical and applied (industry-focused) research capacity.

HOST INSTITUTION



PARTNER INSTITUTIONS



A World
Leading SFI
Research
Centre



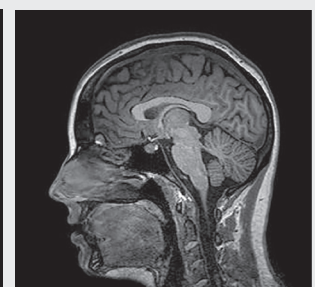
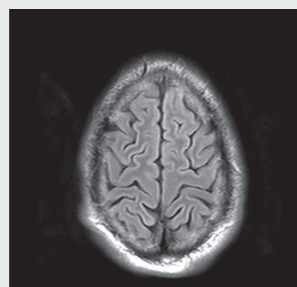
Facilities

- › Sequencing, Bioinformatics and Systems biology
- › Biobanking
- › Molecular and cellular imaging, including:
 - Live-cell imaging and high content screening technologies
 - Intra-Vital Imaging Core
 - Advanced small animal imaging suites
 - Human imaging facility
 - Molecular facilities including high-throughput real-time PCR systems
 - Flow cytometry
 - Proteomic core and immunohistochemistry-based facilities
 - Genomics and next generation sequencing
 - Peptide synthesis and protein chemistry
- › Biomedical Research Facility
- › Clinical Research Centre
- › Microscopy and Imaging
- › Biomarker Detection
- › Stem cell modelling

Industry and Commercialisation

FutureNeuro connects national and multinational industry with key academics and clinicians based in our leading hospitals to provide diagnostic, therapeutic and E-Health solutions.

FutureNeuro's target projects with industry partners will bring diagnostic supports to market, a pipeline of new drugs, and connected health solutions that enable patients to monitor and report their health better than ever before.



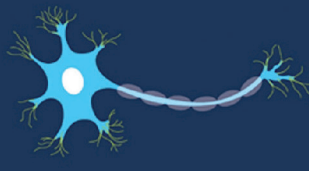
Education and Public Engagement:

FutureNeuro plans to raise public awareness and understanding of the centre's research and the roles it plays in society. A key part of the planned programme is to encourage the public to get involved and interact with science, technology, engineering and maths.

Why is FutureNeuro important?



EPILEPSY
recurrent seizures
40,000
patients in Ireland



MND
fatal neuro-
degeneration
within **2-5** years

NEUROLOGICAL DISORDERS

Health Costs of
€3 Billion
per year

35%
of all Disease
Burden



Key Contacts

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Director

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Prof David Henshall is Professor of Molecular Physiology & Neuroscience and has been working at the Royal College of Surgeons in Ireland since 2004. His main interests lie in the causes and treatment of the neurological disorder epilepsy. Some of his major research projects are looking at the patho-mechanisms underlying epilepsy development following brain injury, neonatal seizures, developing new medications for epilepsy and exploring the role of epigenetics and non-coding RNA in this disease.

He is the Project Co-ordinator for EU FP7-funded project EpiMiRNA, which is looking to improve our understanding of the underlying causes of the epilepsy, and to open up new diagnostic and therapeutic pathways focusing on the role of microRNAs. He is also a funded Investigator in INFANT, the Irish Centre for Foetal and Neonatal Translational Research and an investigator in "NEURO-MIR", a Joint Programming initiative on Neurodegenerative Diseases. Prof Henshall has authored over 100 papers and 7 book chapters.

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