

SINAPSE

Scottish Imaging Network - A Platform for Scientific Excellence

The following Universities are charitable bodies, registered in Scotland, with registration numbers as below.





People



Chief Scientist Office



CHIEF SCIENTIST OFFICE

SINAPSE - Why?

Massive expansion in imaging techniques :

- clinical practice
- research



Serious shortage of radiologists, medical physicists, image analysts, IT specialists, etc, etc

Much “*imaging research*” not being done by those trained in imaging – unlikely to be effective

Existing training unable to keep pace with demand

Single centre studies are too small – need multicentre studies

SINAPSE - background

Chief Scientist's Office Portfolio Strategy Group

September 2006 – “Need for senior academic(s) in imaging, because of the rapid expansion in imaging equipment and considerable opportunities”

Scottish Science Advisory Committee

December 2006 – “Need for Scottish imaging strategy to improve links between academia and the NHS to foster fundamental clinical interactions, shared planning of resources (human and hardware) and data processing systems, to bridge strategic gaps and catalyse more effective research, but also with improved clinical care”

SINAPSE - background

Major equipment investments in Scotland by both NHS and universities

Procurement of:

- up to four PET CT scanners
- cyclotrons
- several MR scanners
- EEG and MEG equipment

SINAPSE - background

Clinical Research Networks :

Stroke

Dementia - DeNDRoN

Mental Health

Diabetes

Paediatrics

Oncology

SINAPSE concept supported by all Clinical Research Networks because it will provide a “backbone” of imaging expertise

Plan

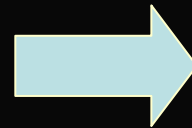
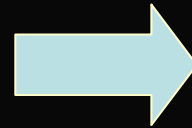
Boost for research infrastructure:

Staff – all levels

Equipment – key elements to achieve common platforms

Shared expertise between centres

Training – all levels, but particularly graduates and post-docs



Greater critical mass

Optimise clinical trials

Apply these principles to multimodality brain research:

MRI

PET/SPECT

EEG/EMG/MEG

SINAPSE

Mission :

A single virtual national clinical imaging research laboratory for 5.5 million people which will be unique in the world

A virtual national training “college” for imaging researchers of the future

SINAPSE – the benefits

Advance health care and science:

- disseminate best research practice
- ethical policy for imaging research
- access state-of-the-art facilities and expertise
- increase study recruitment to whole population
- avoid duplication of small statistically insignificant studies
- rationalise image transfer and storage
- improve guidelines through evidence-based use of imaging

SINAPSE in Scotland – unique framework

The only multimodality, national, research imaging network – internationally unique

Unique subject and patient cohorts in Scotland

Unique NHS imaging resources – PACS

Crucial for new NHS research funding model

The role of imaging in research

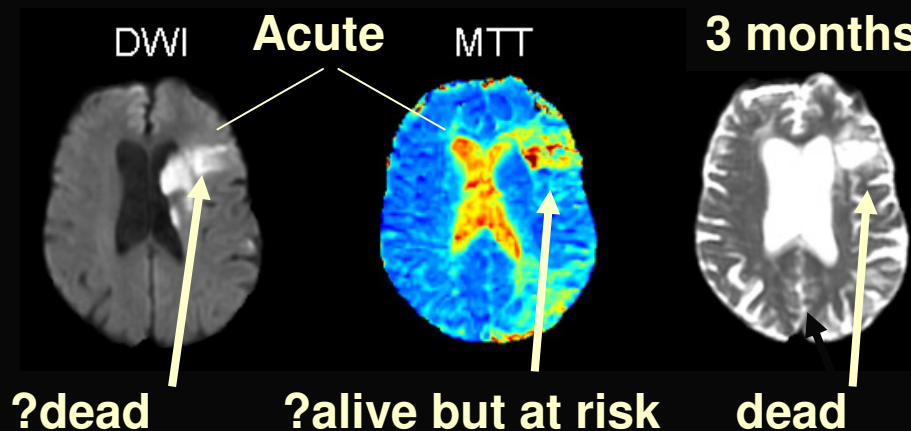
- Identify the population to treat
- Demonstrate that drug is getting to target
- Measure response
- Measure toxicity

SINAPSE : model project



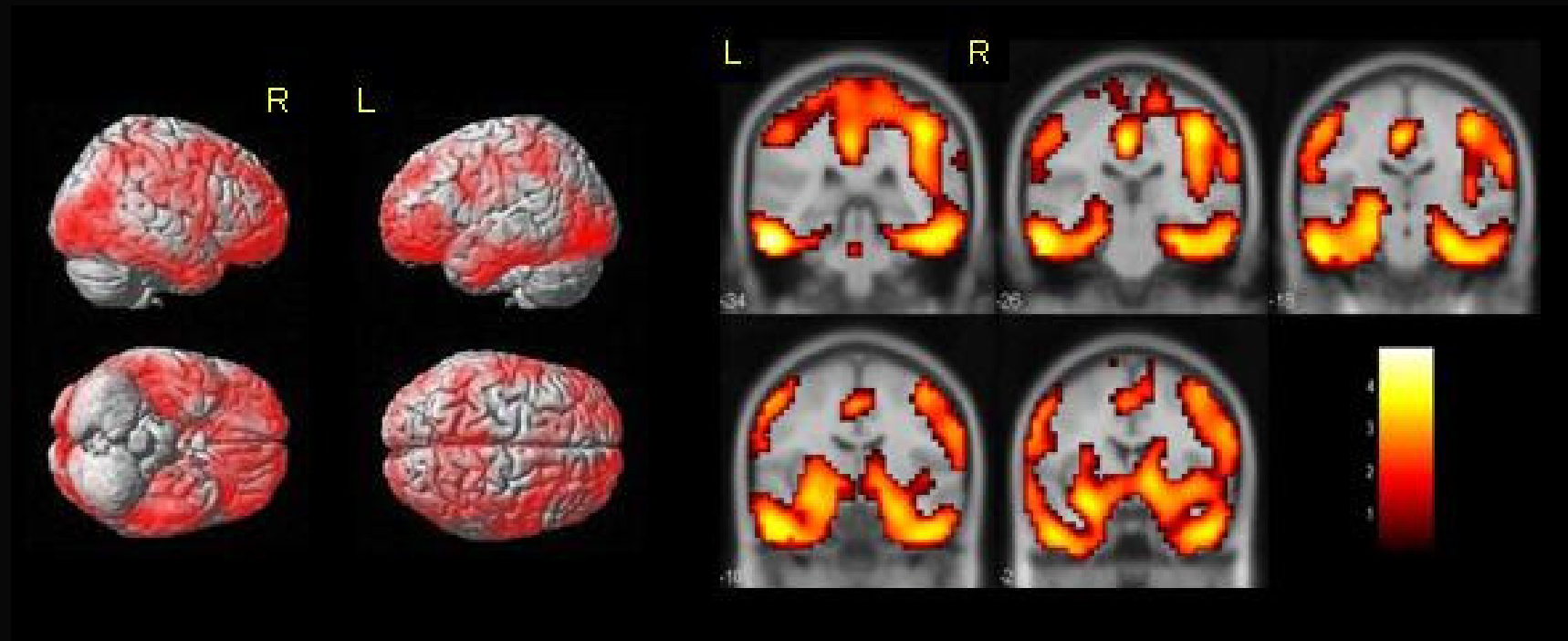
**Translational
Medicine
Research
Collaboration**

Acute Stroke Imaging Project



Q: In acute ischaemic stroke, how can we identify the patients with potentially salvageable tissue so that treatment can be delivered effectively?

Effect of rember™ in Alzheimer's disease



Blood flow differences between treatment and placebo groups with imaging at 6 months predict clinical results at 12 months

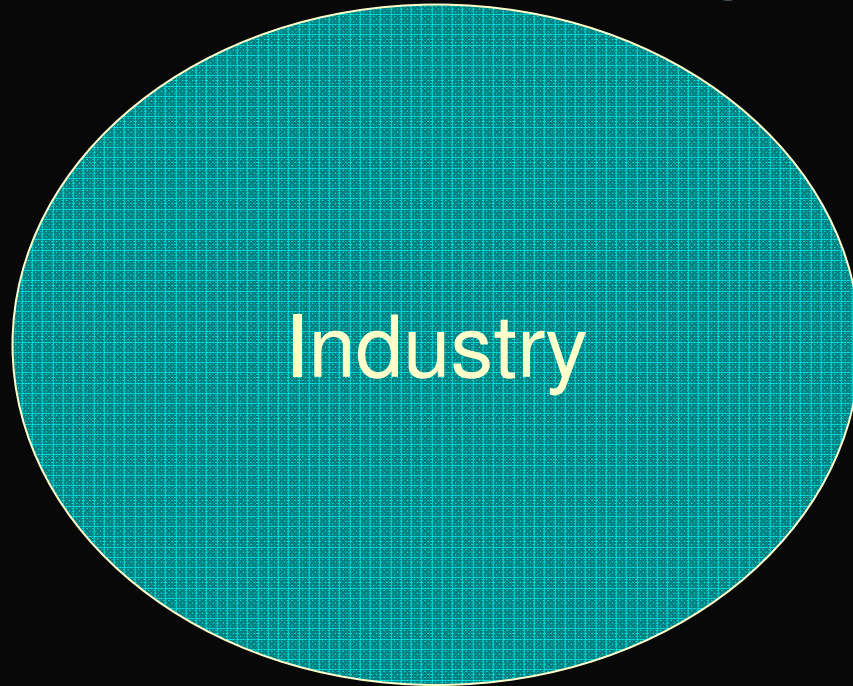
SINAPSE KT opportunities

- Imaging hardware manufacturers
- Imaging processing and analysis software companies
- Contrast agent and radiopharmaceutical producers
- Pharmaceutical companies – drug development
- Image data management companies - PACS

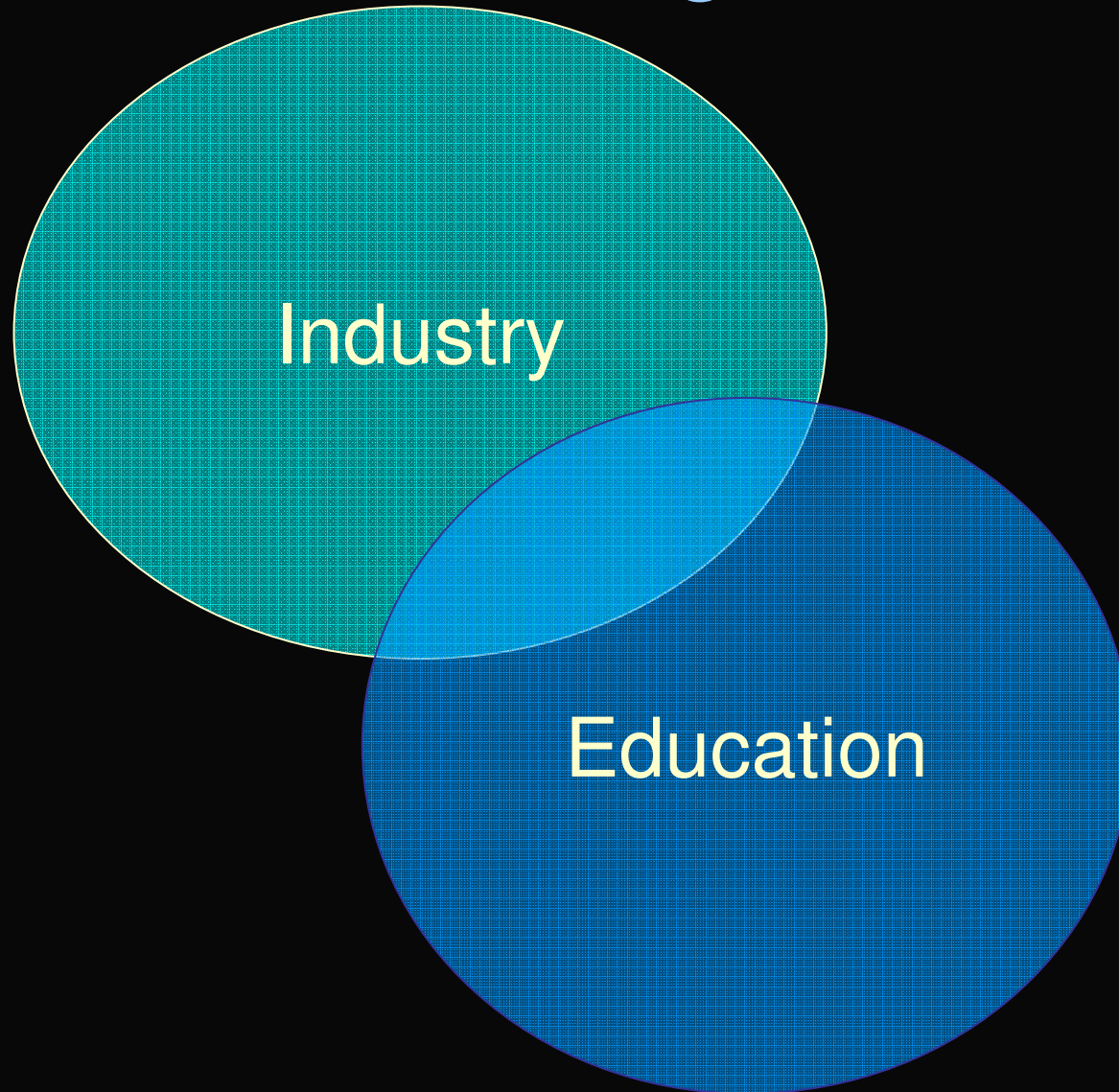
SINAPSE KT opportunities

- Commercially funded research
- Drug development
- Targeted meeting sponsorship
- Shared research – joint grant applications
- Part-funded PhD studentships
- Joint training schemes

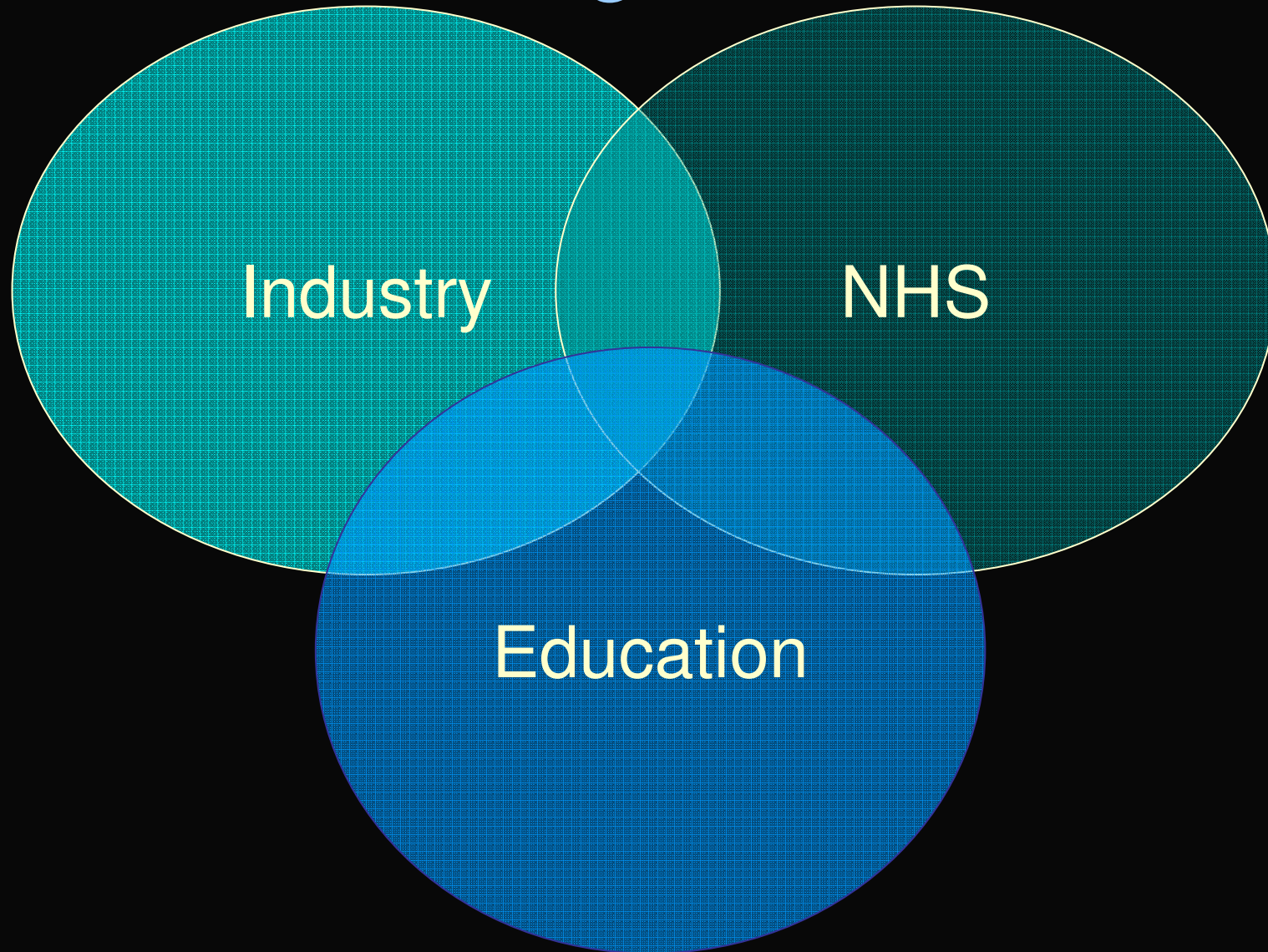
Knowledge transfer



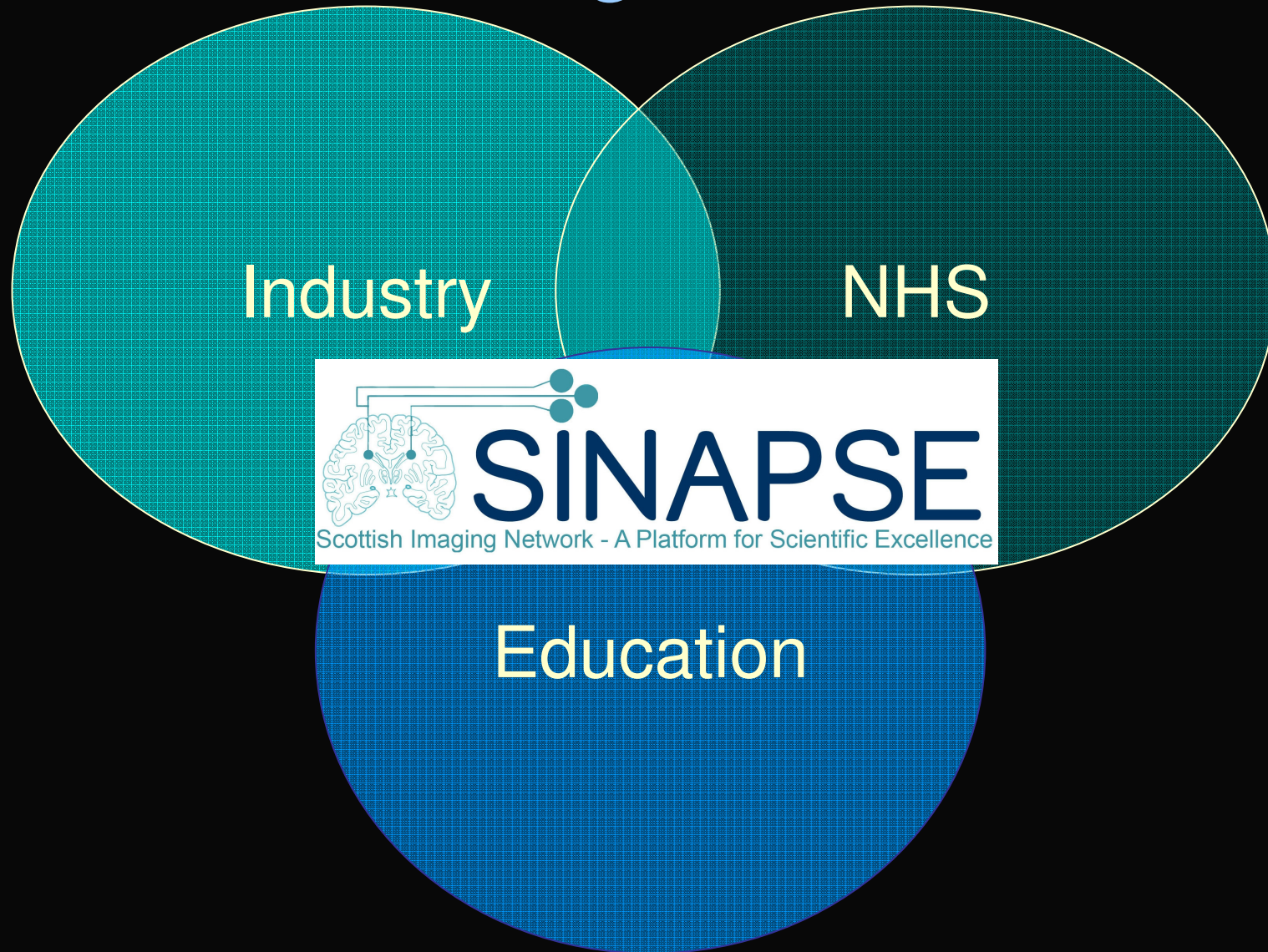
Knowledge transfer



Knowledge transfer



Knowledge transfer





SINAPSE

Scottish Imaging Network - A Platform for Scientific Excellence

A virtual national imaging laboratory enmeshed within a clinical research infrastructure provided by the DoH Clinical Research Networks and emerging Scottish Academic Health Sciences Centre

Important for the Health and Wealth of the Nation

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