SHOWCASE 2011

Winners
The University of Leeds
Postgraduate Researcher Conference
Competitions

- Postgraduate Researcher of the Year
- Three Minute Thesis
- Postgraduate Research Poster of the Year
- Postgraduate Research Image of the Year
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Researcher of the Year
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Researcher of the Year

1st
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Nick West (MH)

1st
Saving lives in bowel cancer

Nick West
Pathology & Tumour Biology
Leeds Institute of Molecular Medicine

December 2011
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Researcher of the Year 2nd
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Aisling Dolan (ENV) 2nd
Are ice sheets stable in a warmer world?

Aisling Dolan
School of Earth and Environment
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Researcher of the Year

Joint 3rd
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Kevin Macnish (Arts)
Nicole Timms (FBS)
3rd
Understanding the impact of enzyme design and engineering

Nicole Timms
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Three Minute Thesis
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TMT 1st

Lizzie Glennon
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TMT

3rd

Fraser Mann
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Research Poster
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Research Poster

1st Place
Brain Research in a Victorian Asylum
How modern neuroscience began at the West Riding Lunatic Asylum, 1866-76

Asylums were the Victorians’ response to insanity. By the end of the nineteenth century, around 74,000 patients resided in 77 of these institutions across England and Wales. The West Riding Lunatic Asylum in Wakefield (right), reached a population of over 1,500.

Historians usually consider asylums as failures, offering little to psychiatric knowledge and treatment of mental illness. The scientific work accomplished in asylums is then usually overlooked.

Yet, for a brief period, the West Riding Lunatic Asylum was one of the most active and important centres of scientific research in the world, laying the foundations of modern brain studies.

James Crichton-Browne, the Director, organised the whole asylum to contribute to his scientific programme of brain research.

Doctors travelled from around the world to conduct investigations in the wards, mortuary and laboratory (left).

Patients were observed, drugs tried, animals vivisected, instruments operated, samples studied macroscopically, and medical case notes and post-mortem reports compiled.

Many research papers followed from these activities, which were advertised through annual galas and published in the Asylum’s own journal, Feversumer, to the international neurological journal Brain.

Cerebral Localisation, the doctrine of localised brain function, was the most significant outcome of the Asylum’s work. Using animal experiments and patient post-mortems, researchers proved that different regions of the brain have different functions and control different parts of the body.

The first modern map of the human brain was made at the Asylum by David Ferrier. It could be used to explain mental and physical disorders (right) and led to novel brain surgery.

Brain imaging is now a fundamental part of neuroscience. Thus, and many other aspects of modern neuroscientific research, first came together in Wakefield. Close study of the archives shows us how much Victorian asylum psychiatry contributed to modern understanding of the brain.

Michael Finn, Centre for History & Philosophy of Science, School of Humanities. Funding provided by AHRC Doctoral Award.
SHOWCASE 2011

Research Poster
2nd Place
Optimising Temporary Hair Styling

Charlotte Nixon and Matthew Clark
School of Chemistry

In the pursuit of an ideal hair style, which factors aid styling and which merely result in damage? The aim of this project is to determine the optimum settings of hair styling irons and other styling devices for optimum style longevity and minimal damage.

Each hair fibre is made up of 3 parts, which contribute to effective styling and to the hair behaviour:

- **Cuticles**: These are arranged like tiles on a roof and protect the important content of the layers. However, they are very easily broken during daily hair care routines.
- **Cortex**: This lays directly under the cuticle layer and is responsible for the mechanical and physical properties of the hair. Once the cuticle is removed the cortex is more easily damaged.
- **Medulla**: This is of no mechanical importance and does not contribute to hair styling.

Types of hair damage caused by hair care.

- Acceptable
- Cuticle Chipping
- Cuticle Stripping
- Cuticle Lifting
- Cuticle Blistering
- Cuticle Cracking

What causes hair damage?

The daily challenge of controlling their hair is a problem for many women. During a daily hair care routine the individual may be damaging their hair, instead of actually styling it. The claimed superiority of some styling devices and strong hold hair sprays have also been suggested approaches to increase style retention. However individuals are still finding their hair becomes damaged and their desired style simply does not last!

What affects hair styling?

- Heat?
- Brand of styler?
- Speed?
- Pressure from the plates?
- Water content of the hair?
- The technique of the individual?
- The quality of your hair spray?
- The amount of damage present?

The aim of the project is to determine the optimum mechanical, physical and chemical parameters to attain maximum style longevity with minimal fibre damage. Once these parameters are evaluated the successful attributes will be integrated into styling irons and assessed by a panel of participants.
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Research Poster

3rd Place
Saving lives from bowel cancer

1. Why does it matter?
   - Bowel cancer is common with one million new cases diagnosed annually worldwide.
   - It is the second most common form of cancer-related death in the UK (over 10,000 per year).
   - At the present time it can only be cured by surgically taking out the cancer, but there is wide variation in outcomes between different centres around the world.
   - The number of patients who survive for at least five years after bowel cancer surgery has improved over recent years.
   - Not all centres have improved to the same degree.

2. How can we investigate this?
   - My research has investigated the importance of the quality of bowel cancer surgery by looking at the material removed by surgeons.
   - Photographs of surgical material were collected from bowel cancer centres around the world.
   - The material was graded into good, moderate and poor according to:
     1. How carefully the surgeon had removed the normal material around the cancer.
     2. How much normal material was removed around the cancer.
   - The relationship to patient survival was determined.

3. What have the studies shown?
   - Good surgery, which carefully removed significantly more normal material around the cancer, occurred in only 32% of bowel cancer cases performed in Leeds.
   - The current average number of patients surviving for five years after surgery in Leeds was 62%.
   - Good surgery resulted in 15% more patients surviving for at least five years when compared to poor surgery.
   - A new operation carried out in hospitals in Germany, Japan and Denmark carefully removed even more normal material around the cancer and was associated with up to 89% survival.

4. What does this mean to patients?
   - We can save more lives following bowel cancer surgery by concentrating on the quality of the material removed by surgeons.
   - The findings of these studies have already contributed towards the Danish government funding surgical training programmes in Denmark.
   - Yorkshire Cancer Research are now going to fund a similar training programme for the Yorkshire region of the UK in July 2012.
   - A widespread move towards better bowel cancer surgery backed up by rigorous audits of the surgical material could save up to 7,000 lives every year in the UK and many more worldwide.

We could save another 7,000 UK lives per year!
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Research Image
SHOWCASE 2011
Research Image
1st Place

SHOWCASE
Celebrating Excellence in Postgraduate Research
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Research Image

2nd Place (Joint)
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Research Image

2nd Place (Joint)