

# Stem Cell Fund Newsletter

AN UPDATE FOR SUPPORTERS OF STEM CELL RESEARCH  
IN THE NORTH EAST

OCTOBER 2010

## Newcastle Research Helps Save Patient's Sight

One of the most exciting stories to come from NESCI in recent years has been that of patients with a painful, blinding disease called Limbal Stem Cell Deficiency (LSCD) treated with their own corneal stem cells.

LSCD is a condition that mostly affects young patients, and is often caused by chemical burns to the eye. The team at NESCI have developed a technique where they take a tiny amount of stem cells from a patient's good eye, and grow them in a lab. They are then implanted in the damaged eye, where they begin to function as normal, restoring sight.

Dr Sajjad Ahmad, who developed the Newcastle method for culturing limbal stem cells, said "This study shows that stem cell research conducted in the laboratory can have a major impact on the quality of life of patients with corneal disease. This work has been a team effort involving stem cell researchers and hospital doctors working together effectively."

Details of the treatment developed in

Newcastle were published in the journal Stem Cells at the end of 2009, and the story has since featured on The One Show and many local and national news shows.



**Dr Francisco Figueiredo**

Professor Michael Whitaker, Co-Director of NESCI, said: "Stem cells from bone marrow have been used successfully for many years to treat cancer and immune disease, but this is the first successful stem cell therapy using stem cells from the eye without animal products to treat disease, an important step towards the clinic."

The team are working hard to bring this treatment rapidly into the clinic, as they complete the necessary clinical trials.

## Stem Cells and Shopping

It's not what you'd normally expect on a weekend shopping trip but shoppers at the MetroCentre had the chance to meet scientists working in the field of stem cells, as NESCI and Centre for Life took over the Town Square one weekend in October.

Activities included the chance to see what life is like as a research scientist in a mock 'Clean room', dressing up in lab

clothing and practicing laboratory skills. Younger shoppers got the chance to make a cell in a Petri dish to take home, with adults particularly interested in the microscopes that showed how cells from skin, muscle and blood look different.

Scientists from NESCI, along with Centre for Life's Science Explainers, were there to talk about the research happening in the region and their hopes for the future.

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## Stem Cell Fund Update

The Stem Cell Charity Fund was set up in 2004 to support stem cell research in the North East, and is managed by Newcastle University on behalf of NE-SCI.

The Fund is used predominantly to support young researchers to attend relevant conferences and meetings to present their work on an international stage.

Attendance at these conferences is essential for our scientists to stay aware of cutting-edge developments in the field and ensure that their research is disseminated amongst the international stem cell community.

Recent recipients of funding include:

Danni Battle, a PhD student working on nuclear organisation and function. She was fortunate to receive a place at a Cold Spring Harbor Symposium, a very prestigious event held just outside New York.

Lisa Lister, a PhD student working on meiosis and embryonic stem cells, attended an EMBO meeting in Edinburgh.

Daniel Maltman, a postdoctoral research associate, is working on adult stem cells and how they turn into different types of cell such as neurons. He attended a Keystone Symposia on Stem Cell Differentiation and De-differentiation in Colorado.

Andrew Henderson, a final-year PhD student, attended Pacificchem. Andrew is a chemist and is working on small molecules that can be used to con-

trol stem cell function when grown in the laboratory.

Without your support our junior researchers would not otherwise be able to attend these conferences and courses – thank you.

*“Being able to attend the Pacificchem 2010 International Congress will provide a valuable opportunity to present and defend my research to a group of high-caliber international scientists.”*

*Andrew Henderson*

Another important use of charitable funding is to support the very early stages of a new research programme. A relatively small amount of money can be used to generate experimental results that can leverage a much greater level of funding. For example, the limbic stem cell project received an initial £50k grant from the Newcastle Healthcare charity which has enabled them to receive more than £1m in additional funding from conventional sources. Without this initial seed funding, many new and innovative projects wouldn't happen.

If you'd like to make a donation to the stem cell fund, or learn more about it, you can visit our Justgiving site ([www.justgiving.com/nuscrf](http://www.justgiving.com/nuscrf)) or contact James Johnston ([james.johnston@ncl.ac.uk](mailto:james.johnston@ncl.ac.uk); 0191 222 6072)



**Scientist talking about stem cells at the MetroCentre**



**Shoppers exploring stem cells with microscopes**

## Take A Closer Look...

A new website called A Closer Look At Stem Cells has been produced by the International Society for Stem Cell Research (ISSCR).

It complements the Patient Guidelines that ISSCR produced a few years ago to help patients and their families evaluate stem cell treatments they may be considering.

### *A Closer Look at Stem Cell Treatments*

<http://www.closerlookatstemcells.org>

The website has been produced in response to the growing number of aggressive marketing campaigns on the Internet and elsewhere offering stem cell

treatments. It includes resources that explain fundamental principles of stem cell biology and the implications for stem cell treatments, outlines the widely accepted process of clinical translation, and provides questions that a patient and/or caregiver should ask purveyors of stem cell treatments to assist them in making decisions.

Ultimately, the website will list stem cell clinics and whether they do or do not provide ISSCR with information showing that appropriate oversight and other patient protections are in place.

The website's launch has been welcomed by the UK National Stem Cell Network and NESCI.

## New Lab Facilities Open

Laboratory space in the Institute of Human Genetics, part of Newcastle University, has recently been refurbished at the Centre for Life. The new world-class facilities have been purposefully designed for NESCI's stem cell scientists to have access to the specialist equipment that they need.

Existing groups based at the Institute of Human Genetics, and some new groups from the Institute of Cellular Medicine based at Newcastle Medical School, have been moving into the new space over recent weeks.

The new facilities should encourage even more col-

laboration between researchers and provide new facilities for our PhD and MRes students.



**Stem cell scientists at work in the new laboratories**

## Geron Launches Clinical Trial

Geron Corporation have enrolled the first patient into their clinical trial of a human embryonic stem cell-based treatment. The US-based company are testing the safety of their cells in patients with severe spinal cord injuries.

This is the first ever clinical trial of a human embryonic stem cell therapy and a landmark in the field of stem cell research. There are many years of rigorous testing ahead before the therapy can be proved safe and effective, but it is being watched closely by scientists all around the world.

Geron started working on the cells in 1999 and they have done a decade of research, costing \$170m, to develop the cells and get them approved by the US regulatory authorities.

Other companies are hoping to follow their lead and have new clinical trials, for a range of clinical problems, approved in the next couple of years. The first clinical trial in the UK using human embryonic stem cells is expected to be the London Project to Cure Blindness, which aims to develop treatments for age-related macular degeneration.

## About Us

NESCI is a collaboration between the research-intensive Universities and NHS Trusts in the North East that brings together scientists and clinicians working on embryonic and adult stem cells in many different tissues and diseases. The involvement of clinical academics and the NHS is helping the progression of stem cell treatments into clinical practice.

Our commitment to practical outcomes for stem cell research will contribute to the development of new therapies for treating degenerative diseases, production of enabling tools and technologies for research and economic growth in the region through commercialization of our innovations.

NESCI's main partners are Newcastle University, Durham University and Newcastle upon Tyne Hospi-

tals NHS Foundation Trust. Our scientists are based in laboratories in three locations: Centre for Life in Newcastle upon Tyne, Durham University's Science park and Newcastle University Medical School.

Our other partners, including CELS, Centre for Life and Newcastle Science City, help us to commercialise our findings and work with the local community to explain our research.

Substantial funding from One North East between 2005 and 2008 allowed us to recruit new staff and develop our infrastructure. Our research is predominantly funded by the UK's Research Councils and Charities. In particular, the Medical Research Council has given our scientists over £2M in the past two years.



For latest news and events:  
[www.nesci.ac.uk](http://www.nesci.ac.uk)

## Support Us

We're very grateful for the support and encouragement we receive from the people of the North East. We hope this Newsletter has given you some insight into the recent activities of NESCI and the ways in which we're working towards better health and wealth for the region.

The latest news that we think is of interest to the general public is posted on our website: <http://www.nesci.ac.uk/news>

You can support NESCI in many ways. You can spread the word about our work amongst your family, friends and colleagues, get involved in public debates and discussions organized by Centre for Life, or make a donation to our Stem Cell Charity Fund ([www.justgiving.com/nuscrf](http://www.justgiving.com/nuscrf)).

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