LENScience CONNECT
Bringing Schools and Scientists Together

LENScience Senior Biology Seminar Series
Student Update Number 4 – March 25th, 2011

In this issue:

- Seminar 1 Update and Best Question
- Seminar 2 Week 1 (March 28—April 1)
- Seminar 1 Challenge Questions
- Seminar 2 Rethinking Pacific Origins

Seminar 1 — Questions

Congratulations to all the students who contributed to the questions from seminar 1. The science team have been busy addressing these during the week and you will see here that they have managed to address nearly all your questions. If you are still waiting—they are working on it and will get to those final questions in the next few days. impressive.

Best Question Award Seminar 1

Andrew Muller, Sacred Heart College

Sacred Heart College Andrew Muller LiveChat question 17th March
If the memory section of the brain is damaged and stem cells are used to replace the damaged cells, would the memory be retained?

Professor Mike Dragunow, Live 17th March 2011

This is a good question. There have been studies done in rodents that have shown that emotional memories of fearful events which are involved in things like stress disorders in humans are encoded in older parts of the brain – the limbic system and the amygdala. This study showed that is the cells that were responsible for the memory of the fearful event could be killed off, the animals no longer had a memory of that fearful event. One of the major challenges for stem cells is that the brain is very complex and if stem cells are going to replace damaged cells, those stem cells would have to integrate in a way that would recapitulate the circuitry that underpins that memory. For a complex memory , this is unlikely to happen. What it could do is the pathways could be reconstituted to allow new learning to occur. So I think getting back a memory would be very difficult.

CENTRE FOR BRAIN RESEARCH
THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau

NATIONAL RESEARCH CENTRE FOR GROWTH AND DEVELOPMENT

LIGGINS INSTITUTE
THE UNIVERSITY OF AUCKLAND
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau

Seminar 2 Week 1 March 28—April 1

- Post your challenge answers on the wiki
- Keep a watch on the wiki to see what other people are saying
- Download the Seminar 2 resources (available from Monday 28th March)
- Attend your seminar 2 school workshop.

Seminar 1 — Challenge Questions

We are waiting! Thanks to Auckland Grammar and Newlands College for your contributions. We will make some comments when we start to see more contributions come in! If you are feeling nervous—get your teacher to take a look before you post! Learning is about taking risks—take a risk on your ideas and see what we think.

For information about support for people and families affected by Huntington's Disease contact.....

Huntington's Disease Associations of New Zealand

http://www.huntingtons.org.nz

0800 HDAUCK 0800 432 825

Seminar 2: Rethinking Pacific Origins

We welcome the Allan Wilson Centre for Molecular Ecology and Evolution, our science partner for Seminar 2.

Human Evolution is all about understanding how we evolved as a species. Associate Professor Lisa Matisoo-Smith of the University of Otago is a leading scientist working on understanding the origins of Pacific peoples. Her work has taken her all over the Pacific to work with people and communities, together developing understanding of how migration of humans into the Pacific occurred. This seminar will link to Human Evolution and Biotechnology concepts in your school programmes.

Associate Professor Matisoo-Smith is a member of the Allan Wilson Centre for Molecular Ecology and Evolution, named after New Zealander, Professor Allan Wilson (1934—1991). Professor Wilson was a pioneer in the use of molecular approaches to understand evolutionary change and reconstruct phylogenies. His work mattered beyond science. The Out of Africa hypothesis – that all human beings share a common female ancestor only 10,000 generations ago and are thus extremely closely related – excited both scientists and also the general public. The outcome was a new understanding of human origins and our place in nature.

Congratulations to the 750 students who have completed their personal registration.

Make sure **YOUR** friends have registered.

The student registration link on the web page or directly here.