



Media Statement

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Eye researcher returns to Perth to continue focus on retinal diseases.

Dr Carla Mellough has returned to Perth as the new Brian King Post-Doctoral Fellowship holder at the Lions Eye Institute (LEI) to pursue her research into human retinal development and disease.

Dr Mellough was born in Scotland but came to Perth as a child and later studied at The University of Western Australia.

She has spent the last 13 years in the United Kingdom and Spain. While overseas, Dr Mellough developed a method for making human retina from pluripotent stem cells, which can potentially produce any cell or tissue of the body. The resulting retina is comparable to that which develops naturally *in utero* but it can be grown and studied entirely in the laboratory.

“My research is focused on gaining a greater understanding of human ophthalmic development and retinal disease,” she said.

“In particular, I am interested in outer retinal degeneration, which affects the part of the retina where light detection takes place. There is still no treatment for many forms of this type of visual loss, making it a leading cause of blindness worldwide.

“We still have a lot of basic biological questions to answer but I feel as though we are on the cusp of a new era in research where human problems can be studied in an unprecedented way.”

Dr Mellough said in the past few years, researchers had learned how to make miniature versions of various human organs (organoids) including the brain, pancreas, liver and kidney.

The ability to make human retinal organoids in the laboratory allows scientists to observe human eye development in a way that was, until recently, impossible.

“Retina can also be made from a patient’s own cells, meaning that the underlying cause of visual loss in a patient can be investigated directly,” she said.

“It’s like growing a miniature version of the eye in a petri dish which can be used as a tool to answer questions about human development and disease. This will help us to identify therapeutic targets for currently untreatable forms of blindness, as well as generate useful cells for transplantation in patients requiring cell replacement.”

Dr Brian King AM MBE, of City Beach, was the first Chairman of the LEI and the Fellowship awarded to Dr Mellough is named after him. He welcomed Dr Mellough’s return to Perth, saying Western Australia needed to continue attracting the best and brightest.

“It is very important that Western Australia is creating opportunities for talented people to return to if they are based overseas,” Dr King said. “Attracting scientists of Carla’s calibre is also vitally important if we are to continue to work towards the LEI’s vision of preventing and curing blindness and eye disease.”

Dr Mellough, of Caversham, said she was delighted with the opportunity to start an independent research career at the LEI.

“There are very few other centres that have this concentration of clinicians, stem, retinal and cell biologists and an ideal infrastructure which provides the perfect environment for research of this nature,” she said.

“The collaborative environment of the LEI is also extremely important to me. We need to work together if we are to find a cure for blindness.”

Media Contact: Francesca Robb – 0409 102 556 / francescarobb@lei.org.au

Picture: Dr Carla Mellough at the Lions Eye Institute laboratory in Nedlands