



Research Project Proforma (School of Medicine)

Submit this form electronically to l.j.cartlidge@keele.ac.uk by 31st July 2015

Research Title:	Assessment of cochlear fibrocytes before transplantation designed to alleviate age-related hearing loss
Keywords (up to 5)	Deafness, hearing, cochlea, fibrocytes
Supervisor:	Prof DN Furness & Dr MG Evans
Job Title:	Neuroscience
School:	Life Sciences
Email Address:	See School web pages
Telephone:	See School web pages
Webpage link:	See School web pages
Type of projects offered (delete as appropriate)	Intercalation (1 year) Studentship (4-8 weeks) Both

(1) Outline the broad aims of your research and its medical relevance (150 words)

In a mouse model of age-related hearing loss it has been noted that loss of cochlear fibrocytes from the lateral wall accompanies and precedes the hearing loss. One possible way of reducing the hearing loss would be to transplant fibrocytes grown in culture into the lateral wall, thereby replacing the lost fibrocytes and restoring their physiological function, which is related to maintaining the extracellular ionic environment around the sensory hair cells. The overall aim of the work is to compare and assess the complement of ion channels and transporters in the fibrocyte membrane, and to account for any differences between cultured cells and those in the cochlear wall. A future transplantation strategy is likely to work better if the cultured fibrocytes closely resemble those *in situ*. The master's project will mainly involve anatomical analysis at both the EM and LM level of fibrocytes used in our experiments (and their neighbours) for quantitative assessment of the labelled membrane

(2) Indicate the skills/techniques the student will learn (100 words)

Microscopy (EM & LM), staining and fixation techniques, immunolabelling (both the technique and analysis), possibly some aspects of cell culture and cochlear dissection.

*Please ensure that appropriate project costs are in place before submitting this form.
You may need to discuss this with your HoS and the Faculty Research Director.*