Science and Technology in Medicine

Research Project Proforma (School of Medicine)

Research Title: **Keywords (up to 5)**	**Neural tissue engineering strategies to promote central nervous system repair**
Supervisor: **Job Title:** **Department:** **Email Address:** **Telephone:** **Webpage link:**	Professor Divya M. Chari Professor of Neural Tissue Engineering School of Medicine d.chari@keele.ac.uk 01782 733314 http://www.keele.ac.uk/istm/staff/divyachari/
Type of projects offered (delete as appropriate)	Intercalation (1 year), studentship- rarely

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

Injuries to the brain and spinal cord can result in permanent neurological damage given the poor self-repair capacity of these regions. Recent research has shown that transplantation of repair mediating stem cells can help to repair areas of injury, and clinical trials have started in some centres. However, there are still major hurdles to be overcome in order to develop effective cell transplantation therapies, such as the ability to track the fate of transplanted cells, engineer these to express chemicals that are beneficial for repair and to prevent cell loss during surgical transplantation procedures.

Our work explores new strategies in the field of biomedical engineering to overcome these challenges and improve cell transplantation therapies for future clinical use. Development of biomimetic models of neurological injury (to reduce reliance on live animal experiments) is also a major goal.

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

Cell and tissue culture to generate stem cells, range of other neural cell types, slice cultures of brain and spinal cord, use of novel medical materials, range of microscopy methods, methods to detect range of neural cells

Please submit this form electronically to Prof Divya Maitreyi Chari on d.chari@keele.ac.uk by 31 July 2015