Science and Technology in Medicine

ResearchProjectProforma(SchoolofMedicine)

Research Title: **Keywords (up to 5)**	Enhancing the growth potential of neurons damaged in spinal cord injuries Motor neurons, spinal cord injury, cell culture, basic science
Supervisor: Job Title: **Department:** **Email Address:** **Telephone:** **Webpage link:**	Monte A. Gates, PhD Keele Neuromics Research Group Keele University Huxley Building School of Life Sciences Keele, Staffordshire ST5 5BG United Kingdom (+44) 1782-733875 m.a.gates@keele.ac.uk
Type of projects offered (delete as appropriate)	Intercalation

Outline the broad aims of your research and its medical relevance (150 words): Approximately 1,200 people suffer traumatic SCIs in the UK annually. Though improvements in rehabilitation continue to enhance the lives of SCI patients, there is currently limited potential to re-establish the neural connections between the brain and spinal cord. Work in my laboratory focusses on how axons grow during development, how they find their target, and how we can use this information to enhance the growth of neurons after they are injured. By growing cortico-spinal neurons in culture dishes and understanding factors that enable them to form axons, we can use this information to test our ability to facilitate the reformation of axons among these cells after they are injured.

Indicate the skills/techniques the student will learn (100 words): This project will involve careful tissue dissection, cell culture and the use of pharmacological compounds to (hopefully) enhance their growth. To document the effects on growth the project will involve the use of immunohistochemical stains and microscopic imaging. Data analyses will include simple data input with the use of statistical programs to quantify and test for significant differences in growth among the cells.

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