BSc in Reproductive & Developmental Sciences &

BSc in Surgery and Anaesthesia Project Outline 2011-2012

**Project Title: Effect of Neuromuscular Calf Stimulation on Lower limb Venous Hemodynamics**

**Academic Supervisor: Professor Alun H Davies**

**Division: Department of Surgery**

**Section: Academic Section of Vascular Surgery**

**Co-supervisor: Mr Ian Franklin**

**Who will be responsible for day-to-day supervision?**

**Mr. Tristan Lane**

**Contact Details of Person whom Medical Student should contact for further details:**

**Name: Mr. Tristan Lane Email: tristan.lane00@imperial.ac.uk Tel:**

**Group’s Research Interest: Vascular Research**

(Double click the appropriate check box to indicate your choices below)

**Is this a clinical [x]  or laboratory [ ]  project?**

**Suitable project for: Reproductive and Development**  **Sciences** Yes **[ ]** No **[x]**

**Surgery and Anaesthesia** Yes **[x]** No **[ ]**

**Synopsis of project (background/research question/methods to be used/relevant key references):**

*Intermittent pneumatic compression (IPC) has established itself as a potentially useful tool for treatment of many lymphatic, venous and arterial diseases. The haemodynamic changes occurring with IPC use, appears to play the central role in exerting its beneficial effects. However, the patient discomfort associated with IPC use together with the need for external power source for the device contributed to poor patient compliance which limited the efficacy of IPC devices.*

*Stimulation of the calf muscle pump by a new portable, easy to apply, internally powered neuromuscular electrical stimulation device (GekoTM) may improve patient compliance. We hypothesize that stimulation of calf muscle contraction by the device can achieve similar haemodynamic effects as compared to IPC.*

*Ten lower limbs in 10 healthy volunteers will be scanned using duplex ultrasonography to obtain flow measurements from lower limb veins before and during application of the device.*

Will the research involve work done under the Animals (Scientific Procedures) 1986 Act? Yes **[ ]** No **[x]**

**If YES*,***

Will the student be required to undergo Home Office training? Yes **[ ]** No **[ ]**

Are the appropriate project and personal licences in place? Yes **[ ]** No **[ ]**

**Project licence**:

Licensee

Date of issue

Number

**Personal licence**:

Licensee

Number

**Will the research involve the use of genetically modified tissue?** Yes **[ ]** No **[x]**

**If YES**

Has the work been approved by the relevant GM Committee Yes **[ ]** No **[ ]**

Date approval was granted

Reference Number

**Will the project involve work on human subjects, human tissue or access to confidential patient information?** Yes **[x]** No **[ ]**

## If YES

## has ethical approval been obtained Yes [ ]  No [x]

## Date approval was granted Currently in process.

## REC Number: 11/LO/1292

**Note: Approval for any of the above MUST be in place before the student begins the project.**

**A risk assessment form will be required.**

**Project Payment**: I have an F account Yes **[x]** No **[ ]**

## If you have an F account please give full account code: