Masters degree in Neuroscience and Behavioural Biology (MPhil in NBB)

Degree outline

Preamble

The initiation of this new Masters level degree builds upon the existing, successful “BrainStEm” exchange programme at undergraduate level in NBB with Emory University. Emory students enrolled in the NBB programme have an opportunity for 1st semester JSA studies at St. Andrews. They take courses in the Schools of Biology and Psychology that are the equivalent of those offered at Emory. Numbers of students in the first three consecutive years of this exchange have been 13 (2003/4), 5 (2004/5) and 8 (2005/6). One student in the 2003/4 group and one in the 2004/5 group elected to stay in St. Andrews for the whole academic year.

The opportunity to provide Masters level training for a subset of NBB students has arisen from two observations. Firstly, several JYS students have expressed the desire to return to St. Andrews to engage in a research-based higher degree. Secondly, a significant proportion (ca. 50% of the 100 per year) of all NBB students are “pre-med” and this group would enhance their chances of acceptance to a US Medical Degree Program by possessing a higher, research-based degree. The St. Andrews international badge on this degree is viewed by colleagues in Emory as especially beneficial.

Recent discussions with the Director of NBB, Dr Paul Lennard, have led to the proposal that the top NBB students be offered a “4+1” option such that they complete a 4 year NBB undergraduate degree in Emory and then enter a 1 year Masters (MPHil) degree at St. Andrews. There will be two main entry routes: one is direct with the Masters degree their first experience of St. Andrews; the second is via the BrainStEm exchange programme. Such JSA students would be well positioned to make contact with potential supervisors during their semester in St. Andrews, discuss projects and then apply for the Masters degree in the following year.

To assist with the marketing of the degree in Emory it is requested that enrolling students be named as “NBB Masters Scholars”. The benefit is to allow students to seek scholarship funding in the USA to enable them study in St. Andrews.

Course duration and timing

The course will last 1 year with the students having already gaining direct entry to year 2 by virtue of their exceptionally appropriate pre-requisite first degree in NBB. Students will enrol at the start of the normal academic year in mid-September. The normal expectation is that the research part of the degree will last until the end of May in the following year. Thesis preparation will take place over the summer (although the opportunity to complete final experiments will be available) and the deadline for submitting the thesis will be September 30th.
**Entry requirements/application process**

Successful applicants would gain direct entry to second year following successful completion of the NBB degree programme and by possessing a GPA of $\geq 3.5$. Prospective students would be expected to make contact with their intended supervisor ahead of applying for the programme. The application procedure would involve completion of a pro forma (to be devised; possibly the current blue form), which would include an outline of the project to be undertaken with completion and signature of the primary supervisor. Students would be recommended by Emory and then approved for entry by St. Andrews via a board of two academic staff in the area of Neuroscience and Behavioural Biology; for the present time Professors Keith Sillar (Biology) and Verity Brown (Psychology).

**Course Content**

This is a research based MPhil degree. The main component of the assessed study will be a thesis based upon the research project. This should be written to the same basic format as the current Senior Honours projects but scaled in terms of expectations to take account of the extended period of research and the more advanced level of student. The hope is that the project will be written up with the intention of submitting the work to a scholarly journal for publication. Project/ supervisor/student combinations will be screened by St. Andrews to try to ensure that this standard is always met. In addition to the research project, all NBB masters students will enrol on the relevant taught 5000 level courses offered by the School in which the supervisor is located (i.e. either Psychology or Biology). In addition, each student is expected to register for 30 credits worth of modules relevant to their project and not previously taken by them either at either Emory or St. Andrews. Thus the credit breakdown will be: Project = 150; Module(s) = 30.

**Supervision**

Each NBB Masters student will have one main supervisor who will be responsible for the day-to-day running of the programme of research. In addition, each project will be allocated a second supervisor to whom the student may refer in the event of problems. Relevant academic staff in Psychology and Biology have been consulted as potential supervisors and without exception (n=18) have enthusiastically offered to accept one or more NBB Masters scholars into their laboratories.

**Progress review**

The student will have (at least) three formal meetings during the year with both the primary and the second supervisor to review progress. The first will be in the first week of the project to discuss aims and objectives and a literature review. The second meeting will follow the first semester of research to review data obtained and adjust the direction of the project if necessary. The third meeting will take place at the end of the 2nd semester of research and will determine the extent to which the remaining period will be split between final experiments, data analysis and the writing phase.
Assessment

The research project will be assessed by a board of examiners comprising the second supervisor and an external examiner proposed by the primary supervisor and agreed by the appropriate Head of School. Assessment and allocation of pass/fail grade will conform to current University procedures for MPhil degrees.

Cost

The cost of the Masters degree will be £11K. This comprises the international fee (£10K) and a contribution to the consumable costs of the project (£1K). Procedures will be put in place to ensure that the fee paid to St. Andrews will be divided £10K to the centre and £1K to the School.

Additional comments

- KTS is soon to employ a part-time assistant to help with developing and marketing all aspects of the Emory-St. Andrews exchanges in Neuroscience and Behavioural Biology. Micol Molinari was a BrainStEm exchange scholar in 2003/4 and will begin a 2 year contract of employment with KTS in June 2005.
- The Masters programme in NBB has resulted directly from the exchange with Emory. However, in future there is no reason why Masters level students from other Institutions in North America should not add to the cohort.