

Structural Modelling of Transmembrane Domains

Industry sponsored DPhil studentship in conjunction with [UCB Celltech](#)

Applications are invited from highly qualified graduates for a new industry sponsored DPhil studentship. This position is available from October 2007. The studentship is open to UK/EU nationals only due to the nature of the funding and will attract an annual enhanced stipend of £15,600 in addition to tuition fees. The project would involve a placement with UCB Celltech.

Project details

Integral membrane proteins constitute about 30% of all known proteins and play key functional roles in cells. Their function is essential for a wide range of physiological events, such as neurotransmitter transport, cell recognition and nerve impulse transmission. Membrane proteins are therefore important potential drug targets.

Despite their importance, experimentally determined structures are rare as they are both difficult and expensive to attain. The value of modelling the structures of these proteins is therefore large.

However, there are no fully automated tools developed specifically for the structure prediction of membrane proteins as opposed to their globular soluble counterparts.

The existing state of the art in membrane protein structure prediction is based on the use of tools developed and trained on globular proteins and then relies on manual manipulation and specialist expertise to generate models.

In this project we would utilize the specific structural features that membrane proteins exhibit to develop a toolkit directed at modelling them more accurately in a fully automated fashion.

The successful applicant can expect to master skills in a variety of techniques in bioinformatics. They will also gain knowledge of membrane protein structure and biology. Applicants with expertise in the areas of mathematics, statistics, computer science, biochemistry or biological sciences would be suitable for this project. Experience of computer programming would be an advantage.

Given that this project involves collaboration between the internationally recognised Department of Statistics and UCB Celltech the studentship provides an ideal opportunity for further career development within the academic or industrial sector.

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