MRC Industrial CASE Studentship to commence October 2010

Understanding genetic factors underlying vulnerability to nicotine addiction and response to treatment
Project Supervisor: Dr Caroline Brennan, School of Biological and Chemical Sciences
Industrial CASE Supervisor: Prof Robert Walton, g-Nostics Ltd

Application deadline: 12 noon, Monday 4th April 2010.
Interviews are expected to be held in the week beginning 19th April 2010

Tobacco addiction remains the leading preventable cause of death in the UK and presents a huge social and financial cost to society. While there have been key advances in understanding the underlying neurocircuitry and adaptation underlying dependence [1], far less is known of developmental and genetic factors that contribute to vulnerability to addiction. Twin studies in humans have demonstrated a significant major genetic contribution to vulnerability to drug dependence and addiction and identified a number of linked alleles. However, the genes responsible for this effect are yet to be determined.

This project aims to identify new genetic markers linked to drug addiction and treatment outcome by interrogation of human SNP data and analysis of lines of mutagenised zebrafish. The results of the work are likely to be relevant to central reward mechanisms involving dopamine and other neurotransmitters both in animals and in humans and may identify proteins whose action could be modified by drug therapy. The potential also exists to identify individuals who might respond to specific therapies for dependence. The ultimate aim of these studies is to develop safer, more effective treatments for addictive disorders.

You will research fundamental mechanisms underlying addictive behaviour that cross the barriers between species. Initial work will use a zebrafish model of nicotine dependence to identify novel genes related to addiction. You will then test these genes in large human studies for effects on level of dependence and response to treatment for nicotine addiction.

The successful applicant will have, or expect to be awarded, a First or Upper Second Class honours degree or an MSc in a biological science, genetics or a related subject. You should have an aptitude for laboratory work and numerical analysis and also be keen to be involved in fieldwork working in a multidisciplinary team organising and managing clinical studies.

This four year, full time PhD studentship is funded by the Medical Research Council in a funding stream intended to foster academic collaboration with industry. The project arises from collaboration between Dr Caroline Brennan (School of Biological and Chemical Sciences), Professor Robert Walton (IHSE, Centre for Health Sciences) and g-Nostics Ltd and would be suitable for candidates wishing to pursue a range of careers in clinical trials, academic science or the biotechnology industry.

Applicants must be UK/EU nationals who have been permanent UK residents since 1 September 2007. Further guidance on eligibility is available via the MRC website:
http://www.mrc.ac.uk/Fundingopportunities/Applicanthandbook/Studentships/Eligibility/index.htm

The tax free stipend will commence at £15,743 rising to £16,462. A Research Training Support grant is also provided together with an allowance for travel and conferences. University fees are also covered.

Informal enquiries should be addressed to Dr Caroline Brennan (c.h.brennan@qmul.ac.uk, tel: 020 7882 3011) or Prof Robert Walton (r.walton@qmul.ac.uk, tel: 020 7882 2502).

For further information about the School of Biological & Chemical Sciences, the Institute of Health Sciences Education and g-Nostics see:
http://www.sbcs.qmul.ac.uk
http://www.ihse.qmul.ac.uk
www.g-Nostics.com

[1] Kelley, A.E., Memory and addiction: shared neural circuitry and molecular mechanisms. Neuron, 2004. *44*(1): p. 161-79.