

Date of submission:
Project title:

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SINAPSE PhD Project Proposal Template for PhDs with Industry starting in 2010

PROJECT

Title:

Development of PET Imaging Biomarkers for Alzheimer's Disease

Planned start date (month/year):

October 2010

SINAPSE Centre (i.e. primary university to which this studentship will be attached):

Aberdeen

University first supervisor: contact details

Name: Prof Matteo Zanda
Department: School of Medical sciences
Address: Foresterhill, Aberdeen AB25 2ZD
Email: m.zanda@abdn.ac.uk
Phone: 01224 555732

Second academic supervisor/ other university or other people in primary university involved with project

Prof Andy Welch, Dr Bettina Platt & Dr Alison Murray

Industry

Pfizer

Industry main contact details

Name: Timothy J. McCarthy
Department: Molecular Medicine – Clinical Imaging & Technologies
Address: Pfizer Gloal R&D
Email: timothy.j.mccarthy@pfizer.com
Phone: 001 860 715 5388

Key Other Industry people involved with Project including Industry Supervisor (if different to Industry main contact above)

Date of submission:
Project title:

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Likely background of suitable student (eg. Neuroscience, MR Physics, Chemistry, Engineering, Informatics, Psychology) and essential skills required prior to starting this PhD:

Chemistry, pharmacology, pharmacy
Basic synthetic chemistry skills required

Summary of proposed project (approximately 200 words):

Alzheimer's disease (AD) accounts for 62% of all dementia and represents a major and increasing problem in many developed countries. It is estimated that the cost of dementia care to the NHS is currently £17 billion per annum. Furthermore, as the average age of the population increases these costs are likely to rise significantly. There are currently around 700,000 people in the UK with dementia and this number is expected to rise to over a million by 2025 and over 1.7 million by 2051 [1]. Consequently there is significant effort being directed at developing effective treatments for AD. Imaging biomarkers have a significant role to play in this effort. Such treatments will undoubtedly be expensive and current clinical assessment for AD is inaccurate. There is a need for methods that allow specific diagnosis. Specific markers of AD may be used to diagnose patients, to help in drug development, to select patients who are most likely to benefit from a particular therapy or to monitor their response. Positron Emission Tomography (PET) is the most sensitive method for imaging function in-vivo. Therefore, in this project, we aim to develop specific PET imaging biomarkers for AD.

Key references (up to five):

1. Dementia UK A report into the prevalence and cost of dementia prepared by the Personal Social Services Research Unit (PSSRU) at the London School of Economics and the Institute of Psychiatry at King's College London, for the Alzheimer's Society (2007)
2. DK Lahiri et al. Drug Development Res. 2002, 56, 267-281
3. MT Fodero-Tavoletti et al. Brain Imaging Behav. 2009, 3, 246-261
4. M. Ono, Chem. Pharm. Bull. 2009, 57, 1029-1039
5. HF Kung et al. J. Med. Chem 2010, 53, 933-941.