

2016/2017 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on 4 July 2016

Supervisor Information (First named supervisor will be the contact):

First Supervisor's Name and Title: Associate Professor Nicola Austin

Department - UOC &/or CDHB (if applicable): Neonatal Service, CDHB and Department of Paediatrics, Christchurch

First Supervisors Phone: 03 3644885

First Supervisors Email: Nicola.austin@cdhb.health.nz

First Supervisors Mailing Address: 4th Floor, Christchurch Women's Hospital, Private Bag 4711, Christchurch.

Co-Supervisors Name and Title(s): Dr Stephanie Moor, Department of Psychological Medicine.

Research Category (Choose one category only – to be used for judging the students' presentations):

Clinical

Laboratory

Community

Project Title (20 words MAXIMUM):

LATE EFFECTS OF PREMATURITY ON NEUROPSYCHOLOGICAL AND HEALTH OUTCOMES IN ADOLESCENCE

Project Description:

Introduction:

Advances in neonatology have led to improved survival of infants born very preterm. However a range of adverse neurodevelopmental and health outcomes occur as a result of their immaturity and the impact of the life-sustaining treatments needed to support them. Our understanding of these developmental impacts has been strengthened by longitudinal studies. We are currently examining a contemporary cohort of children born very preterm at age 17 years along with a cohort of term born peers whom we have been following since birth. We have found high rates of motor, cognitive and learning problems during infancy and childhood. But in addition, very preterm infants also experience early cardiorespiratory morbidity and are at later risk of higher rates of asthma, hypertension, coronary artery disease, obesity and diabetes. The in-utero environment, post-natal nutrition and growth factors as well as the limitation in physical activity due to motor impairment and respiratory co-morbidity all contribute to adverse cardiovascular and respiratory health outcomes and increased health utilisation compared with term controls.

Aims:

The role of the summer student will be to assist in the collation and analysis of health data that has already been collected from families in the current data wave at age 17 years. This will directly inform the overall aims of the research project which are

1/ to examine the psychological and physical health and quality of life of a contemporary cohort of children born very preterm at age 17 years compared with their term born peers.

2/ To assess relations between measures of neonatal risk, family factors and brain structural development from birth to age 12 and later adolescent psychiatric disorder and physical health.

Possible impact (in lay terms):

Our prospective longitudinal study design provides us with the ability to identify neonatal and environmental risk factors along with protective factors that influence the development of children and adolescents born very preterm. We have previously analysed the GP and health contacts at 2 and 4 years. Detail on family composition and changes in composition have been published from 0-9 years. Examination of the impact of having a preterm baby and child on family members is ongoing. The differences in experience between parents of very preterm and term born children are important and little reported, and will guide our understanding, future advice and support for families in the future.

Method:

The student will collate and analyse the reported health contacts from age 9-12 years and the health contacts of the first 80 subjects whom we have already seen at age 17 years. This is data obtained through parent report at 9 and 12 and by self report of the 17 year old. We will also obtain secondary care contacts, eye prescription and dental records from family report and hospital records. We have asked about medication prescriptions, dietary and alternative medicine use at each time point. Examination of this data will contribute to our understanding of the nature and extent of environmental influences on individual subjects and contribute to the research aims of this study.

As well as being part of a multidisciplinary research team and learning about the 'live' research process and environment, the student will have the opportunity to learn first hand how to use a data base and do basic analyses (under the supervision of the team biostatistician). They will also be encouraged to conduct a limited literature review of the topic of health utilization of preterm children and learn these skills and provide context for their data project.