

2017/2018 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on 3 July 2017

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

First **Supervisor's** Name and Title: Dr. Elisabeth Phillips

Department - UOC &/or CDHB (if applicable): UOC

First Supervisors Phone: 03 364 0557

First Supervisors Email: Elisabeth.phillips@otago.ac.nz

First Supervisors Mailing Address: MCRG, Dept. Pathology, UOC, 2 Riccarton Ave, 8011

Co-Supervisors Name and Title(s): Dr. Margaret Currie

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

Clinical

Laboratory X

Community

Project Title (20 words MAXIMUM):

Investigation of signaling pathways activated in breast cancer cell lines after adipocyte co-culture

Project Description:

We are looking for a bright, enthusiastic student to join a multidisciplinary team: The Mackenzie Cancer Research Group. The proposed summer-studentship represents an important part of our ongoing research into the role of adipocytes in the progression of cancer, but is designed for completion within a 10 week Summer-Studentship.

Introduction:

Obesity is linked to a worse outcome in patient with breast cancer regardless of menopausal status and hormone receptor status. Our group has worked on primary cell culture of human adipocytes in a novel experimental co-culture system, where adipocytes from human breast adipose tissue are grown together with breast tumour cell lines. Culturing these cells together has remarkable impact on both the adipocytes and breast tumour cell lines. Adipocytes become de-differentiated, less lipid rich and secrete factors which promote the survival and migration of breast tumour cells *in-vitro* (cancer-associated adipocytes). Breast tumour cells become more resistant to chemotherapy, and display a more aggressive phenotype.

Aim:

To investigate the potential impact of factors secreted by cancer-associated adipocytes on the phenotype of breast cancer cell lines.

Possible impact (in lay terms):

This research is important because it will increase our understanding of cancer cell biology in the context of being grown in fat rich tissue and together with research ongoing in MCRG, may lead to more effective treatments for early-stage breast cancer patients.

Method:

The student will perform Western blotting analyses to measure signaling pathways that are hypothesized to be activated by the factors secreted from cancer-associated adipocytes. If time allows, the student may also perform cell culture experiments with recombinant peptide/proteins and also immunohistochemistry on breast tumour sections.

Student Prerequisites (eg. Medical Student) if applicable:

An interest in science and scientific laboratory experience preferable.

Administration Details

1. Is ethical approval required? Yes, (if time allows for IHC analysis)

If Yes: please circle or tick one of the following:

- a) Applied for (provide application #)
- b) Approved (attach a copy of the letter of approval from the ethics committee or application #)
- c) To be done

2. Are you able to provide the funding for this project (ie. \$5,000 for the student, incidental expenses should be met from departmental or research funds) No

If Yes: Please provide name of the funder _____

If No: Please provide ideas of possible funding sources, including past funding agents and topics often associated with this research area, for the Research Office to contact.

NZBCF, CSNZ +West Coast and Canterbury Division, CMRF, Maurice and Phyllis Paykel Trust

If Yes: You will be sent a request for more information.

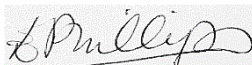
3. Medical Records or Decision Support accessed No

4. Health Connect South or other DHB records No

5. Signatures:

- I have read the 2017/2018 Summer Studentship programme handbook.
- I am prepared to supervise the project and will be available to the student during the studentship (including Christmas/New Year break if the student is working during this time).
- I agree to assume responsibility for the submission **of the student's reports to the Research Office** by the due date 29 January 2018.
- I agree that the project lay report may be available to local media for publicity purposes.

Signature of Project Supervisor(s):



Date:

27/06/2017

- I understand that I am responsible for hosting the Summer Student chosen for this project and will meet any costs incurred. I agree that incidental expenses will be met from departmental or research funds.

Signature of Head of Department:
(Print Name)

Date:

Signature of Clinical Director: (if applicable)
(Print Name)

Date:

