Project Title: Exploring RNA modification to identify new genes that cause cancer	**Code: CENT6**

Host School / Institute: Centenary Institute/Charles Perkins Centre	**Address:** Level 4 West, Charles Perkins Centre

Certificates & Clearances required: No

Primary Supervisor: Dr Justin Wong

Phone: 02 8627 7434	**Email:** j.wong@centenary.org.au

Co-Supervisor/team: This project will be carried out within the Epigenetics and RNA Biology Program at Centenary Institute headed by Dr Justin Wong. Dr Wong's Program has a strong track record in understanding the molecular genetics that underlies cancer development and maintenance. The successful candidate will have the opportunity to embark on an exciting breast cancer-related project. He or she will work closely with a senior postdoctoral scientist and research assistant to elucidate the hitherto unknown role of RNA modification in cancer.

Project Type: Laboratory based; Data Analysis

Project Category: Molecular biology; Cancer

Skills / Attributes of a successful student: Basic knowledge of molecular and cancer biology.
Some experience in basic molecular and cellular biology techniques. A strong team player and eager to learn.

Project Keywords: RNA; RNA modification; Cancer

Project Description: Background: Our team has been studying one of the hottest areas in epigenetics and RNA biology – RNA modification. In the last 2 years, we have begun to understand how aberrant changes to RNA modification, particularly the type of modification called m6A, lead to cancers. Many enzymes that control m6A RNA modification have been reported to be aberrantly expressed in diverse human cancers. As a consequence, m6A modification levels are altered in oncogenes to increase their expression, thereby promoting cancer development and progression.

The Project: The project builds on our extensive preliminary data that have identified new m6A regulatory enzymes that are aberrantly expressed in cancers including breast and prostate cancers. The successful candidate will explore how gain or loss in the expression of genes encoding these enzymes lead to increased cancer cell proliferation and invasiveness.