**RMDSC Practicum Project C**

Project: **Premature Mortality due to Cancer in Selected Countries of North America, Asia, Oceania, and Europe**

1. **Describe Internship position and duties.**

The student will act as a research analyst on an Epidemiological research project. He/she will have a great opportunity to actively work with data extraction and analysis and participating on a manuscript for publication.

1. **Provide brief background information on project.**

In most developed countries, cancer is one of the leading causes of death. Therefore, examination of cancer trends over time and across population is utilized for planning and policy development, prevention and to evaluate health care impacts. Incidence and mortality rates have been routinely used as conventional metrics for quantifying the burden of cancer. They are often adjusted to a third population to make temporal and geographic comparisons possible. A more recent methodology is to measure premature mortality. Although the concept of premature mortality was introduced before the 1990s, it has been challenging to monitor premature measures because of differences in methods used in the literature.

 We recently proposed a new metric of ALSS (Average Lifespan Shortened) in complementation with the existing measures of years of life lost (YLL) and average year of life lost (AYLL). Our novel measure is expressed as the ratio of years of life lost relative to expected lifespan according to respective national life tables. We have already demonstrated the utility of the novel measure in evaluating premature mortality from breast and brain cancer among Canadians.

 To our knowledge no comparison of premature mortality between countries exists. This study will focus on premature mortality due to cancer in selected countries of North America, Asia, Oceania, and Europe. The mortality data will be obtained through WHO Mortality Database. We plan to include following countries in this analysis: Canada, United States of America, Japan, Republic of Korea, Australia, New Zealand, United Kingdom, France, Germany, Italia, Spain, Portugal, Netherlands, Belgium, Switzerland, Austria, Sweden, Denmark, Finland, and Norway. Results from this study will provide a comprehensive picture of premature mortality by country and between countries for each of the main cancer sites.

1. **List timelines including deliverables and deadlines.**

We plan to complete this study at the end of 2018 and bellow is the entire timelines:

1. Extraction of raw data from WHO Mortality Database: May 2018;
2. Review data dictionary and data structure: June 2018
3. Refined data extraction for selected countries: July 2017;
4. Check availability of population data: August 2018
5. Initial analysis: Aug 2018
6. Completed by other collaborators after end of internship: Calculation of ARS (age-standardization rate) for each cancer and each country: September and October 2018, Calculation of YLL, AYLL, and ALSS: November and December 2018; drafting the manuscript for publication: May through December 2018.
7. **Explain relationship to thesis research or program of study: is this a research internship, skills internship, combination of both?**

This internship would cover the practical skills of working with publicly available data, integrating and comparability between different data sources. The student will be invited to attend regular team meetings and discussions related to the teams work load. It will also provide the student insight into the processes, work load and challenges of a data team working with administrative data.

Research skills will also be developed in a non-academic setting. The student will collate the initial data, document limitations/comparability and undertake initial analysis. We anticipate a manuscript will be ultimately achieved from this work but will likely occur after the internship’s completion.

1. **Specify up to 5 learning outcomes including skills/knowledge development and specific project deliverables.**

 Student will learn and develop his/her still set for:

1. Experience working in a Health Services Analytic environment in AHS
2. The use of SAS languages - one of the most powerful statistical language
3. Understanding of the Epidemiological methodology and Cancer data
4. Being familiar with process regarding scientific publication
5. Familiarity with international sources of data
6. **Declare any conflicts of interest by supervisor (e.g., owner or co-owner of company), by student, or other.**

None.

1. **Specify start date, End date, Expected number of hours per week**

We expect that the student starts in May but are flexible with a sooner date.