**Climate change and Health Impact Monitoring through eHealth at SEACO (CHIMES)**

1. **Brief Background of Research Project**
   Climate change is a major health burden worldwide exposing vulnerable populations in low and middle countries (LMICs). Increasing temperatures and heat waves affect human health causing several diseases, ranging from dehydration, cardiovascular heat stress, physical /mental impairments, or exhaustion, to heatstroke.

2. **Project Description**
   The CHIMES is a collaborative research project between the Jeffery Cheah School of Medicine and Health Science, Monash University (Malaysia Campus), and Heidelberg Institute of Global Health (HIGH), Germany. The research team aims to contribute methodological insights on how to strengthen SEACO to effectively carry out an empirical population-based study on climate change and health. The project will evaluate the impact of temperature, humidity, and extreme weather events on individual parameters collected by the wearable sensors, including heart rate, sleep (duration, sleep cycles, interruptions), energy expenditure, and physical activity (steps, distance).

3. **Supervisor / Supervision team**

   Main Supervisor: Prof Tin Tin Su

   Co-supervisors: Dr. Jessica Watterson and Dr. Darwin Gouwanda

4. **Ph.D.Ph.D. Opportunity (research scope of the project)**

   The overarching goal of this study is to understand if consumer-grade wearables may be employed for climate change and health research in the context of the SEACO HDSS in Malaysia.

   The specific research goals are three-folded:

   Objective 1: To get an overview of current health research employing home-based and wearables sensors to generate insights into climate change and health aspects

   Objective 2: To explore the socio-cultural and technical feasibility of home-based sensors and wearables to generate much-needed insights for climate change and health research in the multi-ethnic semi-rural population in Malaysia

   Objective 3: To evaluate the impact of temperature, humidity, and extreme weather events on individual parameters collected by the wearable sensors, including heart rate, sleep (duration, sleep cycles, interruptions), energy expenditure, and physical activity (steps, distance).

   Objective 4: To explore and identify the best approaches and pathways for the transition of existing standard HDSS (SEACO) to an HDSS that is enabled to conduct cutting edge climate change and health research

   The Monash University Malaysia and HIGH (Germany) fund the project cost. The potential candidate who fulfills the eligibility criteria and possesses the required skills will receive a merit scholarship, which covers tuition fees and a stipend. The anticipated start date is June 2022 or until the position is filled.

**5. Eligibility**

Candidates must meet the minimum admission requirements (academic and English language proficiency) for the research degree. In general, this is equivalent to a high distinction average (H1/H1E or 1st Class Honours as per Faculty's and Monash's assessment at admission) from a recognized university. Scholarships will be selected based on the comprehensive ranking of academic achievement, research publications, and research experience or research-related awards.

The data collection will be conducted in Segamat district, Johor state. The candidate is expected to relocate to the Segamat district during the data collection period.

**6. Required Skills**

i. **Technical Skills –** Literature review, statistical analysis, use of Microsoft Office or equivalent, use of citation software, public speaking

ii. **Soft Skills** – Project management, written and oral communication, self-management

iii. **Education background (discipline)** – Data science, public health, epidemiology, medical and health sciences, or information technology. Previous research and study experience on climate change and health, digital health, and/or wearable sensors will be an asset.