International Medical University
Proposed Collaborative Projects for Newton-Ungku Omar Fund (NUOF)

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Newton-Ungku Omar Fund (NUOF): UK-Malaysia Bilateral Medical & Health Sciences Research Collaboration Workshop
2 - 3 February 2016
Research Centres

1. Centre for Environmental and Population Health
   Water and air pollution, building-related illnesses, toxicology, infectious and non-infectious diseases, and nutrition.
   
   [Identify the potential health risks including biological, environmental and occupational, nutrition, social and behavioural risks from basic science to population approach research]

2. Centre for Bioactive Molecules and Drug Delivery
   Discovery and characterisation of bioactive molecules from various bioresources; drug formulation and delivery

3. Centre for Cancer and Stem Cell Research
   - Identification of driver mutations in cancer using interomics approach
   - Development of integrative cancer therapies through advancing precision medicine and drug discovery;
   - Epimutations and cancer susceptibility
     
     [Platform Technologies: Pooled-genome wide shRNA library screen; Whole kinome shRNA library screen; Collaborative Drug Discovery Program; hot-gun Proteomic (collaboration with Cornell University)]

4. Centre of Health Professional Education Research
   Various aspects on education in Medicine and Health Sciences (e.g. inter-professional learning)
Key Researchers

1. Air pollution and NCD (diabetes & obesity)
   Dr. Yap Poh Sin (Environmental epidemiology and biostatistics)
   Dr. Sangeetha Shyam (Nutrition)
   Prof. Stephen Ambu (Environmental health)
   Prof. Chu Wan Loy (Toxicology)
   Dr. Wong Shew Fung (Immunology)
   Prof. Mak Joon Wah (Public health)
   Adjunct Prof. Khor Geok Lin (Nutrition)
   [In collaboration with the Institute for Public Health, Malaysia]

2. Diabetes – predictive markers for disease progression and prevention
   Dr. Wong Shew Fung (Immunology)
   Prof Mak Joon Wah (Public health)
   Prof Stephen Ambu (Environmental health)
   Dr Yap Poh Sin (Environmental epidemiology and biostatistics)

3. Association between oral health and system health
   Prof. Allan Pau (Community dentistry)
Key Researchers

4. Cardioprotective effects of galloylated flavonol glycosides on myocardial infarction
   Dr. Elaine Chan Wan Ling (Medicinal chemistry)
   Dr. Subrat Kumar Bhattamisra (Pharmacology)
   Dr. Mayuren Candasamy (Metabolic disorders)
   Dr. Punniyakoti Veeraveedu Thanikachalam (Metabolic disorders)

5. Biological cues for physiological and hedonic hunger and their response to dietary strategies in obesity treatment
   Prof. Winnie Chee, Dr. Sangeetha Shyam,, Dr. Snigdha Misra,
   Ms. Lee Ching Li, Dr. Megan Chong [Nutrition team]
Project 1: The impact of dietary patterns on prevalence of obesity and overweight among Malaysian adults living in different air quality regions
PI - Dr. Sangeetha Shyam
(in collaboration with the National Institute of Health)

Research Questions
1. Is there any change in dietary pattern among Malaysian overweight and obese population, for the last ten years?
2. Is there an effect of living in regions with different air quality levels on the prevalence of overweight and obesity?
3. Do air quality levels influence the effect of dietary patterns and prevalence of obesity (including central obesity) and overweight in Malaysia?

Project 2: Trend analysis of ambient air pollution and the impact on diabetes and cardiovascular diseases based on Malaysia National Health and Morbidity Surveys for the year 1996 - 2014
PI - Dr. Yap Poh Sin
(in collaboration with the National Institute of Health)

Research Questions
1. Will long-term secular changes in the levels of air pollution such as NO2, NOx, SO2, O3, and PM10 affect the prevalence of diabetes and cardiovascular diseases in the Malaysian population?
2. Will there be differences in cardiovascular diseases in those with diabetes or without diabetes due to the changes in levels of air pollution?
Project 3: Association between oral health problems and systematic diseases such as diabetes and hypertension
PI – Prof. Allan Pau
((in collaboration with the National Institute of Health)

Research Questions
1. What is the association between oral health problems and systemic diseases? Is this association moderated by health service utilisation?
2. Does the concurrent management of periodontal disease, diabetes and chronic health disease result in synergistic health outcomes?

Project 4: Type 2 Diabetes: predictive markers of disease progression and prevention
PI - Dr. Wong Shew Fung

Research Questions
1. Are antibodies to insulin and other peptides be detected in Type 2 diabetes patients?
2. Are antibodies against insulin higher over time in those on insulin therapy?
3. Are there differences in term of the profiles of the inflammatory markers in normal, prediabetes, lean non-diabetes, lean diabetes, obese and non-obese diabetes and type 1 diabetes patients?
Project 5: Biological cues for physiological and hedonic hunger and their response to dietary strategies in obesity treatment
PI – Prof. Winnie Chee

Research Question
• Is there a difference in the biological cues for hunger and reward induced food intake among individuals on weight loss programs using Motivational Interviewing vs control?

Project 6: Cardioprotective effects of galloylated flavonol glycosides on myocardial infarction
PI - Dr. Elaine Chan Wan Ling

Research Objectives
1. To isolate galloylated flavonol glycosides from Calliandra tergemina.
2. To identify the potent cardioprotective compound using in vitro method.
3. To improve the bioavailability of selected potent compound by formulation strategies.
4. To investigate the protective effect of galloylated flavonol glycosides on myocardial infarction (MI) in a mouse model.
Thank you