Previous and current research by theme members

a) Air pollution and health impacts
   - Exposure and effects
   - Four cities 12 year population cohort study
   - Respiratory vs. circulatory system
   - Modifying effects of socio economic characteristics
   - Air pollution and lung cancer
   - Air pollution and morbidity
   - Air pollution and child health
   - Air sampling procedure
   - Breast feeding and air pollution
   - Impact of pets (cat or dog) on allergies
   - Biomarkers of air pollutants
   - Air pollution, lung function and mental health: sleep disorder, ADHD
   - Toxic effects of air pollution
   - Air pollution and obesity
   - Air pollution and asthma
   - Occupational impact of air pollution: Traffic police cohort study n=3700
   - Birth cohort study (5 yrs past birth)
   - Environmental pollution effects in utero
   - Air quality mortality risk assessment

b) DNA repair mechanisms in breast cancer
   - Effect of low radiation dose on radiation workers
   - Worker exposure and worker health
   - Dose measurement
   - Risk management
   - Low radiation dose long-term health effect

c) Calcium signalling in autophagy and basal autophagy in neural axon disorders
   - Nanomaterial studies
   - Occupational exposure in nanomaterial manufacture
   - Nanomaterial toxicology

d) Natural agents based techniques to cure air pollution effects
   - Detox enzyme in broccoli, cauliflower

e) Climate change – Global warming effects
   - FTA
   - CHN-USA economic treaty
f) Musculoskeletal disorders (MSD)
   - Significant health system factor in both AUS and CHN

g) Modelling and prediction from big data

h) Innovative methods and prevention
   - Nanotech PPE
   - Nanoscale measurement
   - Nanoscale analysis

i) Work related disease
   - Ageing population

**Potential for new, collaborative research**

a) Climate change
   - Economic analysis and cost factor impact
   - Environmental policy requirements, such as CO2 reduction target
   - Health effects
   - Burden of disease
   - Prevention
   - Translation of epidemiological research findings into PH policy
   - Alignment of policies and protocols AUS-CHN
   - Change management in policy
   - Significant funding schemes in CHN (eg Guangdong province)
   - Forum public statement
   - Involvement of embassies

b) Air pollution studies
   - Aligned CHN-AUS child birth cohort study (SYSU, QUT, Mater cohort study)

c) Academic and student exchange
   - QUT HSE coursework Master students to conduct theses at SYSU or PKU over 3 months
   - PhD student exchange: up to one year per student
   - Postdoc exchange: up to 3 months
   - Professorial exchange: 3months/1 year, including teaching and research engagement

**Interest matrix**

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**Outcome**

a) Project 1  
SYSU – QUT: NHMRC – NSF grant proposal 2016  
Mater family cohort and Guangdong Province cohort study: Environmental pollution and adverse birth outcomes (Prof. Dong, SYSU; Prof. Morawska; Dr. Paul, QUT); additional partners welcome

b) Project 2  
Indoor air quality and adverse health outcomes: cross-sectional study (Prof. Dong, SYSU; Prof. Huang, PKU; Prof. Morawska; Dr. Paul, QUT); additional partners welcome

c) Project 3  
Effective research transition and policy alignment in climate change management (Prof. Dong, SYSU; Prof. Huang, PKU; Dr. Paul, QUT); additional partners welcome