Sustainable health and wellbeing

Rupert Jones
Global Health Collaborative

- MSc Global and Remote Healthcare
- Expedition medicine (Lucy Obolensky)
- Quality Improvement (Kerri Jones)
- Orthopaedics partnership /training projects Kenya (Christophe McAllen)
- Graspit assessment tools (Matthew Halkes)
- Dementia initiatives (Ian Sherriff)

Great experience and evaluation, less formal Research
PU Research in Global health: Novel educational methods

Tom Gale, Austin Hunt and Arunangsu Chatterjee

- Immersive interactive software
- Based on iPad
- Ebola training and other infection control
- HCWs and community
Mechanisms of health effects of particulate matter using a novel co-culture model of airway cells

Simon Jackson, Gyuri Fejer, Shagun Khera
NERC funded bioaerosols and airway inflammation project

- **Particulate matter (PM)** is key driver of respiratory diseases
- **Endotoxin from** bacteria important component of PM
- Cell signalling system developed using cultured cells
- **Aim to** develop a ‘whole cell biosensor’ to detect the effects of PM.
We have developed novel cell models to study the impacts of PM air pollution

Airway co-cultures of macrophages and epithelial cells.

Bacterial endotoxin and PM exposure act synergistically to damage epithelium.

Exploring the mechanisms using proteomic analyses

Protein and gene expression readouts used as ‘biosensor’
Chronic Respiratory Disease

2011
- Qualitative study Masindi (Euro0)
- Pilot survey (Euro18,000)

2012
- FreshAir COPD Survey Uganda (Euro 150,000)

2013
- Pulmonary rehab pilot (Euro 20,000)

2014
- Global bridges (Mayo Clinic Euro 90,000)
- Pulmonary rehab development pilot (MRC Euro 200,000)

2015
- FreshAir (Horizon 2020 Euro 3,000,000)
Plymouth Global Health Research Unit

**Research Themes**
- Outdoor air pollution
- Household air pollution
- COPD management system
- Pulmonary rehab
- Smoking cessation
- Novel education methods

**PEOPLE**
- Rupert Jones - Respiratory
- Andy McEwen - Smoking cessation
- Simon Jackson - Air pollution
- Andy Barton - Research methodology
- Tom Gale - Educational systems
- Sanne v Kampen - Implementation
Plymouth Global Health Research Unit

LMIC INSTITUTES
AFRICA
Makerere Lung Institute
Kampala

VIETNAM

KYRGYZSTAN

OTHER LMIC RESEARCH SITES
Peru
Nepal
Bangladesh
Sierra Leone
Kenya
India etc

Western PARTNERS
University College London
John Hopkins University
Groningen University
Leiden University
Leicester University

Partner ORGANISATIONS

➢ International primary Care Respiratory group
➢ International Union against TB and lung disease
➢ Lung Consortium International
➢ Pan African Thoracic Society
Missed opportunities
To make global health research work

• We have the potential, we need:
• Backing with strategy and resources
• Collaboration
  – Interfaculty
  – National
  – International