UQ STRATEGIC FUNDING

ANNUAL REPORT

Recipients of Strategic Funding are required to provide a short report to the VC and/or DVC(R) on an annual basis.

Notes:
- Payment of any subsequent year’s allocation will be subject to VC / DVC(R) approval of the annual report.
- Annual reporting requirements apply to strategic funding allocations of $100,000 per annum or higher (i.e. after combining both VC & DVC(R) contributions)
- Final reporting requirements apply to total strategic funding allocations of $50,000 or higher over the duration of the commitment (i.e. after combining both VC & DVC(R) contributions)
- Recipients of funding for Operational Support or UQ Internal Schemes (listed at http://www.uq.edu.au/research/research-management/grants-uq-internal) are not required to complete this annual report.

1. ADMINISTRATIVE SUMMARY

<table>
<thead>
<tr>
<th>Report Year:</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project No:</td>
<td>610608</td>
</tr>
<tr>
<td>DVC(R) Commitment ID (if applicable):</td>
<td></td>
</tr>
<tr>
<td>Project Title:</td>
<td>CHILDRENS HEALTH AND ENVIRONMENT PROGRAM (CHEP)</td>
</tr>
<tr>
<td>Lead CI / Funding Recipient Name:</td>
<td>PETER D SLY</td>
</tr>
<tr>
<td>Administering School/Centre:</td>
<td>CHRC</td>
</tr>
<tr>
<td>Faculty/Institute:</td>
<td>MEDICINE</td>
</tr>
<tr>
<td>Years of Funding (YYYY - YYYY):</td>
<td>2016-2019</td>
</tr>
<tr>
<td>Is this a Progress or Final Report?</td>
<td>PROGRESS</td>
</tr>
<tr>
<td>Are you intending on submitting a variation request? (Yes/No)</td>
<td>NO</td>
</tr>
</tbody>
</table>

Note: Dot points are acceptable for the below items

2. SUMMARY OF OBJECTIVES

100 word summary of strategic objectives (as outlined in the original proposal)

The objectives of the Children’s Health and Environment Program (CHEP) are to understand mechanisms by which environmental exposures impact adversely on children’s health and to develop effective interventions to prevent exposures and improve health outcomes.

CHEP has established effective collaborations with UQ, national and international groups. In 2013 CHEP was designated as the first World Health Organization (WHO) Collaborating Centre at UQ. CHEP now plans to further these aims by establishing a joint Centre of Excellence in CEH with the Public Health Foundation of India and expand collaborations with the National Institute of Public Health, Mexico.

3. STATEMENT ON PROGRESS/OUTCOMES
How have you progressed towards your stated objectives to date?

The Children’s Health and Environment Program (CHEP) has made progress in achieving its objectives in 2016, with particular focus on assessment of exposure to environmental toxicants in early life and impacts on disease outcomes, new approaches to education and training in children’s environmental health, and the work of the World Health Organization (WHO) Collaborating Centre for Children’s Health and the Environment. Research collaborations with the National Research Centre for Environmental Toxicology (ENTOX), Queensland Health, UQ’s School of Population Health, Public Health Foundation of India (PHFI), University of Adelaide, WHO, National Institute for Environmental Health Sciences, USA, and the WHO Network in Children’s Environmental Health have been strengthened.

Specific areas of progression:

**Toxic exposures:**
- Prof Peter Sly acted as a Commissioner for the Lancet–Global Alliance on Health and Pollution–lcahn School of Medicine at Mount Sinai Commission on Environmental pollution, health, and development.
- Continuing the strong collaboration with the WHO eWaste network and international partners:
  - Finalising outputs from the eWaste workshop at the 2015 Pacific Basin Consortium Conference.
  - Hosting of the WHO eWaste network.
  - Development of a chapter on eWaste in the WHO children’s environmental health atlas.
- Air pollution:
  - A project on particulate air pollution and respiratory health of young children in Hanoi.
- Household chemicals and exposure assessment:
  - Improving assessment of exposure to endocrine-disrupting and lipophilic chemicals in the home. A review of BDE-209 in the Australian environment.
  - A cross-sectional biomonitoring study of pesticide exposures in Queensland using pooled urine samples.
  - An analysis of unintentional insecticide poisoning using Queensland Poisons Information Centre calls.
  - Assessing the body burden of persistent organic pollutants in infants/toddlers through analysis of faeces.

**Population health:** Strong research collaboration with Dr Paul Jagals and Dr Colleen Lau on the environmental drivers of disease transmission and impacts of environmental exposures. A review of the WHO Children's Environmental Health Indicators in Australia was published in 2016 and a review of the Sustainable Development Goals and children’s environmental health in Australia is in progress (to be submitted in early 2017).

**Emerging Infectious Diseases:** Dr Colleen Lau has strengthened collaborations with the Fiji Ministry of Health and the WHO Emerging Diseases Surveillance and Response Unit in Fiji. Activities included: operational research project on leptospirosis in collaboration with Massey University; facilitating training workshops on outbreak response for clinical, public health, and environmental health practitioners; and development of two national guidelines – ‘Clinical Guidelines for Management of Leptospirosis’ and ‘Communicable Disease Surveillance and Outbreak Response Guidelines’.
Dr Ricardo J. Soares Magalhaes (UQ Spatial Epidemiology Laboratory) has secured funding from DFAT, Australia to strengthen collaboration in research and research training in spatial mapping of childhood Zika virus with the surveillance and outbreak and response units of the Ministries of Health of Colombia and Brazil.

**Neglected Tropical Diseases:** In 2016 Dr Colleen Lau led an operational research project on lymphatic filariasis elimination in American Samoa in collaboration with the US Centers for Disease Control and the Taskforce for Global Health (USA). The field project involved testing and treating almost 4000 people in American Samoa, including >1100 school children. She will also provide technical support for lymphatic filariasis elimination in other Pacific Islands as a WHO consultant.

**Disease modelling:** In 2016 Dr Kurt Long has continued to work on the project that is part of the Healthy Birth Growth and Development knowledge integration (HBGDki) initiative funded by the Bill and Melinda Gates Foundation. This work has involved the further development of structural equation models (SEM) that model potential household pathogen transmission pathways and the impact these infections have on growth faltering among children enrolled in the Global Enteric Multicenter Study (GEMS). The work is part of broader effort to develop a risk assessment framework (RAF) that integrates the causal analysis of pathogen-specific infection risk and impaired growth with spatial modeling techniques using data from GEMS. Dr Long’s modeling work has now been prioritized by the HBGDki working group.

Another related project has involved working with the Institute for Disease Modeling in the development of statistical and mathematical simulations that can predict diarrheal disease outcomes in GEMS given different intervention scenarios.

**Respiratory health/Asthma/Chronic lung disease:** Developed and validated a new technique for measuring airway obstruction in young children which is now being used to test impact of early life environmental stressors on respiratory health in studies in Brisbane, Geelong, South Africa, Brazil and the USA.

**Capacity building**
- A strong collaboration has been developed with the Public Health Foundation of India (PHFI) in children’s environmental health:
  - Dr. Soares Magalhaes has established a research agreement with PHFI funded by the International Development Research Centre (IDRC), Canada to assist in research and research training in zoonotic disease spatial mapping, including Anthrax, Japanese encephalitis and Brucella.
  - CHEP is organising a joint conference between the Pacific Basin Consortium, PHFI, and the East-West Center to be held in New Delhi, in November 2017.
  - A multi-country study in Australia, India, the UK and China on the human health impacts of urban health and biodiversity, including a review of existing evidence.
  - Children’s environmental health capacity building in the South Asian region through planned workshops and training.
- Prof Peter Sly is the Chairperson of the Pacific Basin Consortium. CHEP staff worked with the PBC Secretariat to:
  - Organise the 17th International PBC Conference to be held in November 2017. The conference will be hosted by the Public Health Foundation of India.
  - Coordinate and edit a special series in Reviews on Environmental Health of invited Reviews from the 16th International Conference of the Pacific Basin Consortium.
  - Coordinate activities with the Pacific Basin Consortium Secretariat, disseminate research and news.
• Engagement with the Queensland Alliance for Environmental Health Science (QAEHS), which aims to support environmental health research, facilitate collaboration between Queensland Health and environmental health researchers, build environmental health capacity in Queensland and communicate risks to policy makers.

Education and training:
• Involvement in the Children's Environmental Health (PUBH7032) course run by the School of Population Health.
• Initiated an Occupational Trainee program and hosted two trainees.
• Prof Peter Sly provided training in children’s environmental health for paediatricians at the International Congress of Paediatric Pulmonology (CIPP) in Naples in June 2016.
• Participation in the WHO Children’s Environmental Health Training meeting held in Florence in November 2016.
• Updating WHO children’s environmental health training materials.
• Needs assessment of MOOC in children’s environmental health to feed into the proposed UQ Environmental Health Masters program.

Public engagement:
• Developed a monthly newsletter on Children’s Environmental Health on behalf of WHO and the United Nations Environment Program. During 2016, 12 issues were sent to a network of recipients and published on the WHO website. The newsletter includes recent peer-reviewed original articles, reviews, UN agency press releases, upcoming events and children’s environmental health in the news.
• Developed an atlas of children’s environmental health with the WHO Department of Public Health, Environmental and Social Determinants of Health (to be published March 2017), targeted at policy makers, the general public and health professionals. The atlas presents an overview of the state of children’s environmental health globally, introductions to 26 major threats to children’s environmental health, maps and graphics.
• Continued leadership of the WHO eWaste network which aims to foster research and capacity building through a network of experts and international stakeholders in the area of eWaste management.
• Close collaboration with WHO Department of Public Health, Environmental and Social Determinants of Health, WHO collaborating centres and other groups.

WHO activities. CHEP has continued its active collaboration with WHO through:
• Leadership of the WHO Children’s Environmental Health Network.
• Participation in and hosting of the WHO eWaste network.
• Developed an atlas of children’s environmental health with the WHO Department of Public Health, Environmental and Social Determinants of Health (to be published March 2017).
• Assisted in developing a WHO publication on the burden of disease in children attributable to the environment (to be published March 2017).
• Participated in establishing a multi-year WHO project to develop new training materials on children’s environmental health for healthcare professionals.
• Updating WHO children’s environmental health training materials.
• Submitted a joint contribution on children’s environmental health and human rights to the United Nations Committee on the Rights of the Child Day of General Discussion dedicated to “Children’s rights and the environment”.

Research Output/Publications 2016:
Book chapters
Original research articles


Reviews/Editorials/Commentaries


8. Sly PD, Wainwright CE. Diagnosis and early life risk factors for bronchiectasis in cystic fibrosis:
Section Editor/Special Journal Editions


99.
4. EXPECTATIONS FOR COMING YEAR (not applicable for final reports)

How do you expect to use your funding allocation for the coming year?

Funds will be used according to the original budget allocation to cover staff, equipment and research costs.

Specific activities and research themes that will be undertaken by CHEP and its collaborative network will include:

- The WHO Collaborating Centres Children’s Environmental Health Network and WHO eWaste network
- Developing the collaboration with PHIFI and researchers in the South Asian region through collaboration and regional training workshops.
• Improving training and education in children’s environmental health.
• Improving assessment of exposure to environmental toxicants in early life.
• Identifying biomarkers of environmental exposures in early life and risk of chronic non-communicable disease.
• Improving assessment of environmental risk factors for chronic non-communicable disease and the impact of early life environmental exposures on the risk for chronic disease.
CERTIFICATIONS
Note: Approvals by email are acceptable.

Annual Report:

Lead CI or Funding Recipient:

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Peter Sly</td>
<td></td>
<td>27/01/2017</td>
</tr>
</tbody>
</table>

Head of School/Centre/Institute:
I have read and endorse the annual report.

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof Karen Morie</td>
<td></td>
<td>27/01/2017</td>
</tr>
</tbody>
</table>

SUBMISSION OF THE REPORT
Please email the completed form to strategicfunding@uq.edu.au

Submission requirements:
- Send a separate email for each annual report submitted
- Attach a single PDF document containing all approvals
- Use descriptive subject lines to help categorise emails
e.g. {Project number} Annual Report