

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

Report Year:	2017
Project No:	610608
DVC(R) Commitment ID (if applicable):	
Project Title:	CHILDRENS HEALTH AND ENVIRONMENT PROGRAM (CHEP)
Lead CI / Funding Recipient Name:	PETER D SLY
Administering School/Centre:	CHRC
Faculty/Institute:	MEDICINE
Years of Funding (YYYY - YYYY):	2016-2019
Is this a Progress or Final Report?	PROGRESS
Are you intending on submitting a variation request? (Yes/No)	NO

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 taken significant steps towards achieving its objectives in 2017. Achievements include the redesignation of the World Health

Organization (WHO) Collaborating Centre for Children's Health and the Environment for a second four year term (2017-2020), the publication of the WHO Children's Environmental Health Package and the Lancet Global Commission on Pollution and Health, and the hosting of a successful joint conference with the Pacific Basin Consortium (PBC) and Public Health Foundation of India (PHFI). Research collaborations with the Queensland Alliance for Environmental Health Science (QAEHS), Queensland Health, UQ's School of Public Health, WHO, the Public Health Foundation of India (PHFI), the National Institute for Environmental Health Sciences, USA, and the WHO Network in Children's Environmental Health have been strengthened and expanded to include a new alliance with the Environmental Protection Authority, Victoria.

Specific areas of progression:

Toxic exposures:

- Prof Peter Sly was the only Australian-based Commissioner for the Lancet–Global Alliance on Health and Pollution–Icahn School of Medicine at Mount Sinai Commission on Environmental pollution, health, and development. The Commission report, published in October 2017, received substantial attention from Australian and International media.
- Continuing the strong collaboration with the WHO eWaste network and international partners:
 - Publication of a chapter on e-waste in the WHO publication *“Inheriting a sustainable world? Atlas on children’s health and the environment”*.
 - CHEP staff organised a symposium on e-waste at the PHFI-PBC conference in Delhi, India in November 2017.
 - CHEP co-hosted a workshop children’s health at the PBC conference in Delhi, India, November 2017.
- Air pollution:
 - Publication of the Lancet Commission on Pollution and Health.
 - Publication of a study on the association between particulate air pollution and respiratory admissions among young children in Hanoi, Vietnam, as part of an ongoing project on particulate air pollution and respiratory health of young children in Hanoi.
 - Publication of an assessment on household air pollution in township communities in South Africa.
- Household chemicals and exposure assessment:
 - An assessment of exposure of young children to organophosphate pesticides in Brisbane homes.
 - Assessing the body burden of persistent organic pollutants in Queensland infants/toddlers through analysis of faeces.
 - Behavioural determinants of Queensland infant’s exposures to polybrominated flame retardants in their homes.

Population health:

Publication of a review of the use of WHO Children's Environmental Health Indicators in low- and middle-income countries in Asia.

Professor Paul Jagals directed programs on assessing the impact of stressed environments on health outcomes in Queensland:

- Spatio-temporal distribution of hospitalisations related to coal mining in Queensland – PhD student
- Hazards in the environment outcomes related to resource development (mining, coal seam gas, and agriculture) and their effect on birth weight in Queensland – PhD student

Environmental Health Information System Development

- Scoping the potential for Environmental Health Information System development for the Solomon Island Government – MP student

Emerging Infectious Diseases: Dr Colleen Lau continued collaborations with the Fiji Ministry of Health and the WHO Emerging Diseases Surveillance and Response Unit in Fiji. Outputs published in 2017 included:

- Studies of *Environmental factors that drive the spatial distribution of Salmonella Typhi in Fiji: a Vi-antigen seroprevalence study;*
- *Social Mixing in Fiji: Who-Eats-With-Whom Contact Patterns and Implications of Age and Ethnic Heterogeneity for Disease Dynamics in the Pacific Islands;*
- *Unravelling Infectious Disease Eco-epidemiology using Bayesian Networks and Scenario Analysis: A Case Study of Leptospirosis in Fiji;*
- *A Cross-sectional Seroepidemiological Survey of Typhoid Fever in Fiji;*
- *Human Leptospirosis in Fiji: An Eco-epidemiological Approach to Identifying Risk Factors and Environmental Drivers for Transmission.*

Dr Lau secured seed funding for a project on Spatial Bayesian Networks for predictive risk mapping of leptospirosis in Fiji.

Dr Ricardo Soares Magalhaes finalised a scoping paper and field case-control study on Spatial epidemiology of Dengue Fever in Odisha, India with PHFI. Dr Soares Magalhaes established Latin-America Australia Tropical Infections Spatial Epidemiology Network (LaTISE-Net), delivered two research-training courses (July 2017 and November 2017) in spatial analysis for vector borne diseases in Colombia and Brazil.

Dr Soares Magalhaes conducted an intervention trial of health promotion human rabies strategies in schools in China using a video, pamphlets and lectures vs community mobile phone SMS with CAHEC, China CDC, and University of Guangxi. The last follow up has finished and Dr Soares Magalhaes is currently analysing the data.

Neglected Tropical Diseases: In 2017 Dr Colleen Lau continued 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. Results were published on the prevalence and risk factors associated with lymphatic filariasis in American Samoa after mass drug administration.

Dr Soares Magalhaes published two studies on the Helminth-Gut Microbiome-Brain Axis project (UQ and JCU) with UQ PhD student Ms Kei Owada and postdoctoral fellow Dr. Vanina Guernier.

Dr Soares Magalhaes received funding from END FUND to investigate the geographical distribution of urinary schistosomiasis in school-aged children in Rwanda.

Professor Jagals was involved in projects on technology development for health-related water quality assessment. A project on the detection of viable hookworm ova from wastewater and sludge was completed in 2017 and another in underway on environmental and public health application of helminth removal from wastewater treatment sludge.

Disease modelling: In 2017 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. One PhD student, Johanna Sanchez Hernandez, and one Research Assistant, Inong Gunanti, work on this project.

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:

The European Respiratory Society Clinical Research Collaboration, INCIRCLE, was re-funded (2017-2019) and expanded to include additional centres in Australia, Europe and the UK. Studies are continuing on the clinical validity and utility of the T-FOT, a new technique for measuring airway obstruction in young children, in Brisbane, Geelong, South Africa, Brazil and the USA. Claire Shackleton completed and submitted her PhD thesis on this technique in December 2017.

Capacity building

- The collaboration with the Public Health Foundation of India (PHFI):
 - CHEP organised a successful conference with the Pacific Basin Consortium and Public Health Foundation of India. The International Conference of the Public Health Foundation of India (PHFI) and Pacific Basin Consortium for Environment and Health (PBC), ‘Environmental Health and Sustainable Development’, was held on the 14-16 November 2017 in Delhi, India. The conference was the first of its kind to be held in India. It was attended by 220 health professionals, toxicologists, engineers, lawyers, environmental activists, and representatives from non-governmental organisations. Over the three days, five plenary speakers presented on priority environmental health topics. 78 Symposium presentations were held in 18 Symposium sessions, nine students gave oral presentations, and 55 poster presentations were presented. Students and early-career researchers were trained in Impact Assessment for Environment and Health, Children’s Environmental Health and Scientific and Grant Writing. A successful student and early career networking event was held on Wednesday 15 November, providing an opportunity to engage with senior academics.
 - CHEP, PHFI and NIEHS hosted a workshop on children’s environmental health capacity building in the South Asian region in November 2017.
 - CHEP, PHFI and NIEHS organised a workshop on e-waste and children’s environmental health in November 2017.
 - Dr. Soares Magalhaes finalised a scoping paper and field case-control study on Spatial epidemiology of Dengue Fever in Odisha, India with PHFI.
 - CHEP contributed to a multi-country study in Australia, India, the UK and China on the human health impacts of urban health and biodiversity. The initial pilot study has been completed and a review of existing evidence was published, co-authored by PHFI staff.
- 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 in Delhi, India, in November 2017.

- Coordinate activities with the Pacific Basin Consortium Secretariat to disseminate research and news, and maintain the PBC website.
- Engagement with the Queensland Alliance for Environmental Health Science (QAEHS).
 - Seed funding for a project analysing a recently-recognized environmental stressor, environmentally-persistent free radicals, in Brisbane houses was obtained. The preliminary data generated are currently being used for applications to the ARC (DP19) and NHMRC (project grant) for submission in 2018.
 - Continued supervision of RHD students. Currently 2 PhD students are jointly supervised between CHEP and QAEHS.

Education and training:

- Involvement in the Children's Environmental Health (PUBH7032) course run by the School of Population Health and coordinated by Dr Luke Knibbs, School of Public Health.
- CHEP continued its Occupational Trainee program and hosted one trainee in 2017.
- CHEP staff organised training workshops in children's environmental health and environmental health risk assessment at the PHFI-PBC Conference. Prof Peter Sly and Prof Paul Jagals provided training.
- CHEP staff contributed to updates of the WHO children's environmental health training materials.

Public engagement:

- CHEP staff write a monthly newsletter on Children's Environmental Health on behalf of WHO and the United Nations Environment Program. 12 issues were published during 2017.
- CHEP staff coordinated the writing and publication of an atlas of children's environmental health with the WHO Department of Public Health, Environmental and Social Determinants of Health, targeted at policy makers, the general public and health professionals. The atlas presents an overview of the state of children's environmental health globally and introductions to 26 key threats to children's environmental health. A series on air pollution titled 'So I Can Breathe' was aired on BBC News to coincide with the publication's release. The publication was widely reported in the international media 280 English language media articles were published on the reports. Articles were also published in French, Spanish, German, Portuguese and other languages. WHO tweets reached 3.1 million views and were retweeted 7,400 times. WHO Facebook posts reached 1.3 million people.

WHO activities. CHEP has continued its active collaboration with WHO through:

- Leadership of the WHO Children's Environmental Health Network. The network includes WHO CCs in the Western Pacific Region (Hokkaido University, Sapporo, Japan; National Institute of Environmental Research, Incheon, Republic of Korea; The University of Queensland, Brisbane, Australia); South East Asian Region (Chulabhorn Research Institute, Bangkok, Thailand); Europe (Utrecht University, Utrecht, Netherlands); and the Americas (National Institute of Environmental Health Sciences, North Carolina, U.S.A.; Icahn School of Medicine at Mt Sinai, New York, U.S.A.; University at Albany, Albany, U.S.A.; Autonomous University of San Luis Potosi, Mexico; Pontifical Universidad Catolica Rio Grande do Sul, Porto Alegre, Brazil; University of the Oriental Republic, Montevideo, Uruguay); and two NGOs in official relationships with WHO (International Network on Children's Health, Environment and Safety (INCHES); International Society of Doctors for the Environment (ISDE)). A new collaborating centre at the University of Alberta was designated in 2017.

- Publication of an *Inheriting a sustainable world? Atlas on children's health and the environment* with the WHO Department of Public Health, Environmental and Social Determinants of Health, in March 2017.
- Assisted in coordinating a WHO report on the burden of disease in children attributable to the environment *Don't pollute my future! The impact of the environment on children's health*, published in March 2017.
- Contributed to 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.
- CHEP participated in the first meeting of Australian WHO collaborating centres held in Melbourne, April 2017. Discussion included linking relevant collaborating centres in Child Health to the Network of collaborating centres in CEH.
- CHEP was redesignated as a WHO collaborating centre for a second four-year term in August 2017. CHEP has committed to closer collaboration with the WHO Western Pacific Regional Office and a focus on climate change and children's environmental health in the Pacific.

Research Output/Publications 2017:

WHO Publications

1. WHO. Don't pollute my future! The impact of the environment on children's health. Geneva: World Health Organization, 2017
2. WHO. Inheriting a sustainable world? Atlas on children's health and the environment. Geneva: World Health Organization, 2017.

Book chapters

Original research articles

3. Sly PD, Arphacharus N, Aung WP, Gamble MV, Graxiano J, Hai DN, Henshaw DL, Navasumrit P, Ravichandran B, Ruchirawat M, Suk W, Tshering U South-East Asian Children's Environmental Health: networking to improve health outcomes. *Bhutan Health Journal* (2017), accepted for publication.
4. Brealey JC, Chappell KJ, Galbraith S, Fantino E, Gaydon J, Tozer S, Young PR, Holt PG, Sly PD. Streptococcus pneumoniae colonization of the nasopharynx is associated with increased severity during respiratory syncytial virus infection in young children. *Respirology* (2017), accepted for publication.
5. Sly PD, Shackleton D, Czovek D, Hantos Z Systematic Error in Respiratory Impedance Using Commercial Equipment Calibrated According to Manufacturers Instructions *Am J Respir Crit Care Med* (2017) , accepted for publication.
6. Sly PD, Busi L Validation of the GLI-2012 spirometry reference equations in Argentinian children. *Pediatr Pulmonol* (2017), accepted for publication.
7. Shackleton C, Czovek D, Grimwood K, Ware R, Hantos Z, Sly PD Defining 'healthy' in preschool-aged children for forced oscillation technique reference equations. *Respirology* (2017), accepted for publication.
8. Lau CL, Sheridan S, Ryan S, et al. Detecting and confirming residual hotspots of lymphatic filariasis transmission in American Samoa 8 years after stopping mass drug administration. *PLoS neglected tropical diseases*. 2017;11(9):e0005914.
9. Landrigan P, Fuller R, Acosta N, et. al. The Lancet Commission on pollution and health. *Lancet*. 2017:1-51.
10. Xu Z, Glass K, Lau CL, Geard N, Graves P, Clements A. A Synthetic Population for Modelling the Dynamics of Infectious Disease Transmission in American Samoa. *Scientific reports*. 2017;7(1):16725.

11. Coutts SP, King JD, Pa'au M, et al. Prevalence and risk factors associated with lymphatic filariasis in American Samoa after mass drug administration. *Tropical medicine and health*. 2017;45:22.
12. Luong LM, Phung D, Sly PD, Morawska L, Thai PK. The association between particulate air pollution and respiratory admissions among young children in Hanoi, Vietnam. *The Science of the total environment*. 2017;578:249-255.
13. Gray DM, Turkovic L, Willemsse L, et al. Lung Function in African Infants in the Drakenstein Child Health Study: Impact of Lower Respiratory Tract Illness. *American journal of respiratory and critical care medicine*. 2017;195:212-220.
14. Chen Y, Sjodin A, McLachlan MS, et al. Persistent organic pollutants in infants and toddlers: Relationship between concentrations in matched plasma and faecal samples. *Environment International*. 2017;107:82-88.
15. Boeyen J, Callan AC, Blake D, et al. Investigating the relationship between environmental factors and respiratory health outcomes in school children using the forced oscillation technique. *International Journal of Hygiene and Environmental Health*. 2017;220(2):494-502.
16. English K, Chen Y, Toms L-M, Jagals P, Ware RS., Mueller JF, Sly PD. Polybrominated diphenyl ether flame retardant concentrations in faeces from young children in Queensland, Australia and associations with environmental and behavioural factors. *Environmental Research*. 2017;158 669-676. doi:10.1016/j.envres.2017.07.022
17. Moore SE, Norman RE, Suetani Si, Thomas HJ, Sly PD, Scott JG. Consequences of bullying victimization in childhood and adolescence: a systematic review and meta-analysis. *World Journal of Psychiatry*. 2017;7 1: 60-76. doi:10.5498/wjp.v7.i1.60
18. Hollams EM, Teo SM, Kusel M, Holt BJ, Holt KE, Inouye M, De Klerk NH, Zhang G, Sly PD, Hart PH, Holt PG. Vitamin D over the first decade and susceptibility to childhood allergy and asthma. *Journal of Allergy and Clinical Immunology*. 2017;139 2: 472-481. doi:10.1016/j.jaci.2016.07.032
19. Vanker A, Barnett W, Workman L, Nduru PM, Sly PD, Gie RP, et al. Early-life exposure to indoor air pollution or tobacco smoke and lower respiratory tract illness and wheezing in African infants: a longitudinal birth cohort study. *The Lancet Planetary health*. 2017;1(8):e328-e36.
20. Lau CL, Mayfield HJ, Lowry JH, Watson CH, Kama M, Nilles EJ, et al. Unravelling infectious disease eco-epidemiology using Bayesian networks and scenario analysis: A case study of leptospirosis in Fiji. *Environmental Modelling & Software*. 2017;97:271-86.
21. Baturcam E, Snape N, Yeo TH, et al. Human Metapneumovirus Impairs Apoptosis of Nasal Epithelial Cells in Asthma via HSP70. *Journal of Innate Immunity*. 2017;9(1):52-64.
22. Guernier V, Brennan B, Yakob L, Milinovich G, Clements ACA, Soares Magalhaes RJ. Gut microbiota disturbance during helminth infection: can it affect cognition and behaviour of children? *BMC Infectious Diseases*. 2017;17(1):58.
23. Ortu G, Ndayishimiye O, Clements M, Kayugi D, Campbell CH, Lamine MS, et al. Countrywide Reassessment of *Schistosoma mansoni* Infection in Burundi Using a Urine-Circulating Cathodic Antigen Rapid Test: Informing the National Control Program. *The American journal of tropical medicine and hygiene*. 2017;96(3):664-73.
24. Huang X, Lambert S, Lau C, Soares Magalhaes RJ, Marquess J, Rajmohan M, et al. Assessing the social and environmental determinants of pertussis epidemics in Queensland, Australia: a Bayesian spatio-temporal analysis. *Epidemiology and Infection*. 2017;145(6):1221-30.
25. Assoum M, Ortu G, Basanez M-G, Lau CL, Clements A, Halton K, Fenwick A, Soares Magalhaes R. Spatiotemporal distribution and population at risk of soil-transmitted

- helminth infections following an eight-year school-based deworming programme in Burundi 2007-2014. *Parasites and Vectors* 2017; 10:583.
26. Lau CL, Mayfield HJ, Lowry JH, Watson CH, Kama M, Nilles EJ, Smith CS. Unravelling Infectious Disease Eco-epidemiology using Bayesian Networks and Scenario Analysis: A Case Study of Leptospirosis in Fiji. *Environmental Modelling and Software* 2017; 97:1-16.
 27. Lau C, Watson C, Lowry J, David M, Craig S, Wynwood S, Kama M, Nilles E. Human Leptospirosis in Fiji: An Eco-epidemiological Approach to Identifying Risk Factors and Environmental Drivers for Transmission. *PLoS Neglected Tropical Diseases* 2016; 10(1): e0004405.
 28. Sidhu JPS, Jagals P, Smith A and Toze S. 2017. Comparative prevalence of *Escherichia coli* carrying virulence genes and class 1 and 2 integrons in sub-tropical and cool temperate freshwater. *Journal of Environ Sci Pollut Res*.
 29. Gyawali P, Sidhu JPS, Ahmed W, Jagals P and Toze S. 2017. Comparison of culture-based, vital stain and PMA-qPCR methods for the quantitative detection of viable hookworm ova. *Water Science & Technology*.
 30. Gyawali P, Ahmed A, Sidhu JPS, Jagals P and Toze S. 2017. Quantification of hookworm ova from wastewater matrices using quantitative PCR. *Journal of Environmental Sciences*.
 31. Werner AK, Cameron CM, Watt K, Vink S, Jagals P and Page A. 2017. Is Increasing Coal Seam Gas Well Development Activity Associated with Increasing Hospitalisation Rates in Queensland, Australia? An Exploratory Analysis 1995–2011. *Int. J. Environ. Res. Public Health*.

Reviews/Editorials/Commentaries

32. Pavord I, Beasley R, Agusti A, et al. After asthma: redefining airways diseases. *Lancet*. 2017.
33. Renz H, Holt PG, Inouye M, Logan AC, Prescott SL, Sly PD. An exposome perspective: Early-life events and immune development in a changing world. *Journal of Allergy and Clinical Immunology*. 2017;140(1):24-40.
34. Gray D, Willemsse L, Visagie A, et al. Determinants of early-life lung function in African infants. *Thorax*. 2017;72(5):445-450.
35. Sly PD, Zar HJ. The Spectrum of Lower Respiratory Tract Illness in Children after Pneumococcal Conjugate Vaccination. *American journal of respiratory and critical care medicine*. 2017;195(1):13-15.
36. Gray LEK, O’Hely M, Ranganathan S, Sly PD, Vuillermin P. The Maternal Diet, Gut Bacteria, and Bacterial Metabolites during Pregnancy Influence Offspring Asthma. *Frontiers in Immunology*. 2017;8(365).
37. Sly PD. E-cigarettes: risk mitigation for smokers or a public health disaster?. *Reviews On Environmental Health*. 2017;32 3: 221-222. doi:10.1515/reveh-2017-0022
38. Flies EJ, Skelly C, Negi SS, Prabhakaran P, Liu Q, Liu K, Goldizen FC, Lease C, Weinstein P. Biodiverse green spaces: a prescription for global urban health. *Frontiers in Ecology and the Environment*. 2017;15 9: 510-516. doi:10.1002/fee.1630
39. Lau CL, Townell N, Stephenson E, Van den Berg D, Craig SB. Leptospirosis – and important zoonosis acquired through work, play and travel. *The Australian Journal of General Practice*. Accepted Oct 2017.
40. Owada K, Nielsen M, Lau C, Clements A, Yakob L, Soares Magalhaes R. Measuring the Effect of Soil-transmitted Helminth Infections on Cognitive Function in Children: Systematic Review and Critical Appraisal of Evidence. *Advances in Parasitology* 2017. <https://doi.org/10.1016/bs.apar.2017.05.002>.

41. Jung EM, Kim EM, Kang M, Goldizen F, Gore F, Drisse MNB, et al. Children's Environmental Health Indicators for Low- and Middle-Income Countries in Asia. *Annals of Global Health*.83(3):530-40. [http://www.annalsofglobalhealth.org/article/S2214-9996\(17\)30665-3/fulltext](http://www.annalsofglobalhealth.org/article/S2214-9996(17)30665-3/fulltext)

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 PHFI 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.

Grants obtained in 2017 1147980for CHEP research projects:

- Faculty of Medicine Infrastructure Fund: Vitrocell Cloud 12 exposure chamber for studies exposing epithelial cells to pollutants. Anna Henningham, \$64,000
- QAESH seeding grant: Impact of environmentally persistent free radicals on respiratory health of children. Sly PD, Mueller J, Cormier S, Knibbs L. 2017, \$24,035
- NHMRC APP1147980: Maternal carriage of *Prevotella* during pregnancy influences offspring innate immune responses and asthma at age 7. Vuillermin P, Macia L, Sly PD, Mackay C, Ranganathan S, Moreno-Betancun M, Vukoic D, Collier F. 2018-2021, \$904,140.

Applications submitted in 2017/18


- NRMHR Centres of Research Excellence APP1152946: Sly PD, Mueller J, Ponsonby A-L, Jagals P, Vuillermin P, Hinwood A, Wraith D, Cormier S, Fantino E. Health effects of environmental exposures. 2019-2023, \$2,500,000
- ARC DP190101186: Sly PD, Henningham A, Hinwood A, Cormier S, Fantino E. Modelling the impact of environmental stressors on innate immunity. 2019-2021, \$827,941.
- NHMRC-NAFOSTED APP1155241: Sly PD, Pham A, Ranganathan S, Led H, Thai P, Phung D, Ware R, Tran D, To H, Nguyen V. Modelling the impact of environmental stressors on innate immunity. 2019-2021, TBD
- NHMRC APP1159189: Sly PD, Cormier S, Knibbs L, Dennekamp M, Henningham A, Fantino E. Environmentally persistent free radicals: the missing link between air pollution and adverse health outcomes in early life. 2019-2022, TBD

CERTIFICATIONS

Note: Approvals by email are acceptable.


Annual Report:

Lead CI or Funding Recipient:

Name	Signature	Date
Professor Peter Sly		24/01/2018

Head of School/Centre/Institute:

I have read and endorse the annual report.

Name	Signature	Date
Karen Moritz		29/1/18

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