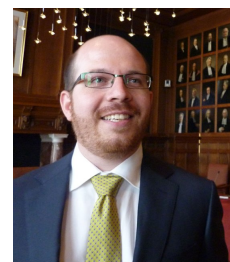


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Human activities have a profound and lasting impact on our environment. These changes in turn, come back to impact our own health and well-being - often unfairly as we see again and again those who pollute the least suffering the worst of our changing environment.

My work involves examining, and teaching, how our activities lead to these changes in the environment and the impact these changes have upon us as a global community.

Employment

Planetary Health & Exposoom

UMC Utrecht

1 Nov 2023 → 31 Dec 9999

Research outputs

Expanded PAH analysis of household air pollution in a rural region of China with high lung cancer incidence

Zhang, Y., Meliefste, K., Hu, W., Portengen, L., Rothman, N., Reiss, B., Li, J., Xu, J., Ning, B., Liu, D., Cassee, F. R., Wong, J. Y. Y., Vermeulen, R., Lan, Q. & Downward, G. S., 15 Nov 2024, In: Environmental Pollution. 361, 124717.

Collective knowledge exchange through regional hubs: Local expertise, global platform

Llamas, C. A., Guinto, R., Addison, J., Alam, N., Amoakoh, H. B., Artola Arita, V., Kolpa, N., Mattijsen, J., Zhang, Y., Downward, G. S. & Browne, J. L., Oct 2024, In: Tropical Medicine and International Health. 29, 10, p. 849-855 7 p.

Evaluation of risk prediction models to select lung cancer screening participants in Europe: a prospective cohort consortium analysis

Feng, X., Goodley, P., Alcala, K., Guida, F., Kaaks, R., Vermeulen, R., Downward, G. S., Bonet, C., Colorado-Yohar, S. M., Albanes, D., Weinstein, S. J., Goldberg, M., Zins, M., Relton, C., Langhammer, A., Skogholt, A. H., Johansson, M. & Robbins, H. A., Sept 2024, In: The Lancet Digital Health. 6, 9, p. e614-e624

Physiological Response to the COVID-19 Vaccine: Insights From a Prospective, Randomized, Single-Blinded, Crossover Trial

Markovic, A., Kovacevic, V., Brakenhoff, T. B., Veen, D., Klaver, P., Mitratza, M., Downward, G. S., Grobbee, D. E., Cronin, M., Goodale, B. M., 31 Jul 2024, In: Journal of Medical Internet Research. 26, 14 p., e51120.

Air pollution and childhood epilepsy diagnosis at a first seizure clinic in The Netherlands: A case-control study

Slinger, G., Verbeek, S. T., van Diessen, E., Noorlag, L., Braun, K. P. J., Shen, Y., Otte, W. M. & Downward, G. S., Jul 2024, In: Environmental Advances. 16, 100541.

Long-term exposure to particulate matter and all-cause and cause-specific mortality in an analysis of multiple Asian cohorts

Downward, G. S., Hystad, P., Tasmin, S., Abe, S. K., Saito, E., Rahman, M. S., Islam, M. R., Gupta, P. C., Sawada, N., Malekzadeh, R., You, S. L., Ahsan, H., Park, S. K., Pednekar, M. S., Tsugane, S., Etemadi, A., Chen, C. J., Shin, A., Chen, Y. & Boffetta, P. & 9 others, Chia, K. S., Matsuo, K., Qiao, Y. L., Rothman, N., Zheng, W., Inoue, M., Kang, D., Lan, Q. & Vermeulen, R. C. H., Jul 2024, In: Environment International. 189, 108803.

Hemoglobin and Its Relationship with Fatigue in Long-COVID Patients Three to Six Months after SARS-CoV-2 Infection

Bazdar, S., Bloemsma, L. D., Baalbaki, N., Blankestijn, J. M., Cornelissen, M. E. B., Beijers, R. J. H. C. G., Sondermeijer, B. M., van Wijck, Y., Downward, G. S., Maitland-van der Zee, A. H., Jun 2024, In: Biomedicines. 12, 6, 15 p., 1234.

Early life ambient air pollution, household fuel use, and under-5 mortality in Ghana

Moro, A., Nonterah, E. A., Klipstein-Grobusch, K., Oladokun, S., Welaga, P., Ansah, P. O., Hystad, P., Vermeulen, R., Oduro, A. R. & Downward, G., May 2024, In: *Environment International*. 187, 108693.

Sex-specific differences in physiological parameters related to SARS-CoV-2 infections among a national cohort (COVI-GAPP study)

Grossmann, K., Risch, M., Markovic, A., Aeschbacher, S., Weideli, O. C., Velez, L., Kovac, M., Pereira, F., Wohlwend, N., Risch, C., Hillmann, D., Lung, T., Renz, H., Twerenbold, R., Rothenbühler, M., Leibovitz, D., Kovacevic, V., Klaver, P., Brakenhoff, T. B. & Franks, B. & 11 others, Mitratza, M., Downward, G. S., Dowling, A., Montes, S., Veen, D., Grobbee, D. E., Cronin, M., Conen, D., Goodale, B. M., Risch, L., Mar 2024, In: *PLoS ONE*. 19, 3 March, e0292203.

The effects of the COVID-19 pandemic on PICU admissions for severe asthma exacerbations: A single-center experience

Bazdar, S., van den Berg, S., Rutjes, N. W., Bloemsma, L. D., Downward, G. S., De Weger, L. A., Terheggen-Lagro, S. W. J., van Wijck, Y., Maitland van der Zee, A. H. & Kapitein, B., Feb 2024, In: *Pediatric Pulmonology*. 59, 2, p. 263-273 11 p.

The effect of the urban exposome on COVID-19 health outcomes: A systematic review and meta-analysis

Houweling, L., Maitland-Van der Zee, A.-H., Holtjer, J. C. S., Bazdar, S., Vermeulen, R. C. H., Downward, G. S. & Bloemsma, L. D., 1 Jan 2024, In: *Environmental Research*. 240, Pt 2, p. 117351 117351.

Traffic-related air pollution, road traffic noise, and Parkinson's disease: Evaluations in two Dutch cohort studies

Lomme, J., Reedijk, M., Peters, S., Downward, G. S., Stefanopoulou, M., Vermeulen, R. & Huss, A., Dec 2023, In: *Environmental epidemiology (Philadelphia, Pa.)*. 7, 6, e272.

Exposure to smoky coal combustion emissions and leukocyte Alu retroelement copy number

Blechter, B., Wong, J. Y. Y., Hu, W., Cawthon, R., Downward, G. S., Portengen, L., Zhang, Y., Ning, B., Rahman, M. L., Ji, B.-T., Li, J., Yang, K., Dean Hosgood, H., Silverman, D. T., Huang, Y., Rothman, N., Vermeulen, R. & Lan, Q., 10 Aug 2023, In: *Carcinogenesis*. 44, 5, p. 404-410 7 p.

Household air pollution and epigenetic aging in Xuanwei, China

Blechter, B., Cardenas, A., Shi, J., Wong, J. Y. Y., Hu, W., Rahman, M. L., Breeze, C., Downward, G. S., Portengen, L., Zhang, Y., Ning, B., Ji, B.-T., Cawthon, R., Li, J., Yang, K., Bozack, A., Dean Hosgood, H., Silverman, D. T., Huang, Y. & Rothman, N. & 2 others, Vermeulen, R. & Lan, Q., Aug 2023, In: *Environment International*. 178, 108041.

Precision Medicine for More Oxygen (P4O2)-Study Design and First Results of the Long COVID-19 Extension

Jul 2023, In: *Journal of Personalized Medicine*. 13, 7, p. 1-28 28 p., 1060.

The use of environmental scenarios to project future health effects: a scoping review

Weber, E., Downward, G. S., Ebi, K. L., Lucas, P. L. & van Vuuren, D., Jul 2023, In: *The Lancet. Planetary health*. 7, 7, p. e611-e621 11 p.

Identifying risk factors for COPD and adult-onset asthma: an umbrella review

30 Jun 2023, In: *European respiratory review : an official journal of the European Respiratory Society*. 32, 168, 230009.

Alterations to biomarkers related to long-term exposure to diesel exhaust at concentrations below occupational exposure limits in the European Union and the USA

Wong, J. Y., Blechter, B., Bassig, B. A., Dai, Y., Vermeulen, R., Hu, W., Rahman, M. L., Duan, H., Niu, Y., Downward, G. S., Leng, S., Ji, B.-T., Fu, W., Xu, J., Meliefste, K., Zhou, B., Yang, J., Ren, D., Ye, M. & Jia, X. & 7 others, Meng, T., Bin, P., Hosgood, H. D., Rothman, N., Silverman, D. T., Zheng, Y. & Lan, Q., 1 May 2023, In: *Occupational and environmental medicine*. 80, 5, p. 260-267 8 p.

Methylated polycyclic aromatic hydrocarbons from household coal use across the life course and risk of lung cancer in a large cohort of 42,420 subjects in Xuanwei, China

Portengen, L., Downward, G., Bassig, B. A., Blechter, B., Hu, W., Wong, J. Y. Y., Ning, B., Rahman, M. L., Ji, B.-T., Li, J., Yang, K., Hosgood, H. D., Silverman, D. T., Rothman, N., Huang, Y., Vermeulen, R. & Lan, Q., Mar 2023, In: *Environment International*. 173, p. 107870 107870.

A Systematic Review of Chest Imaging Findings in Long COVID Patients

1 Feb 2023, In: *Journal of Personalized Medicine*. 13, 2, 15 p., 282.

Association between diesel exhaust exposure and mitochondrial DNA methylation

Seow, W. J., Hu, W., Dai, Y., Vermeulen, R., Byun, H.-M., Wong, J. Y. Y., Bassig, B. A., Blechter, B., Duan, H., Niu, Y., Downward, G., Leng, S., Ji, B.-T., Fu, W., Xu, J., Meliefste, K., Yang, J., Ren, D., Ye, M. & Meng, T. & 6 others, Bin, P., Hosgood, H. D., Silverman, D. T., Rothman, N., Zheng, Y. & Lan, Q., 1 Dec 2022, In: *Carcinogenesis*. 43, 12, p. 1131-1136 6 p.

Diet-wide association study of 92 foods and nutrients and lung cancer risk in the European Prospective Investigation into Cancer and Nutrition study and the Netherlands Cohort Study

Heath, A. K., Muller, D. C., van den Brandt, P. A., Critselis, E., Gunter, M., Vineis, P., Weiderpass, E., Boeing, H., Ferrari, P., Merritt, M. A., Rostgaard-Hansen, A. L., Tjønneland, A., Overvad, K., Katzke, V., Srouf, B., Masala, G., Sacerdote, C., Ricceri, F., Pasanisi, F. & Bueno-de-Mesquita, B. & 16 others, Downward, G. S., Skeie, G., Sandanger, T. M., Crous-Bou, M., Rodríguez-Barranco, M., Amiano, P., Huerta, J. M., Ardanaz, E., Drake, I., Johansson, M., Johansson, I., Key, T., Papadimitriou, N., Riboli, E., Tzoulaki, I. & Tsilidis, K. K., 1 Dec 2022, In: *International Journal of Cancer*. 151, 11, p. 1935-1946 12 p.

Overall and cause-specific mortality rates among men and women with high exposure to indoor air pollution from the use of smoky and smokeless coal: a cohort study in Xuanwei, China

Nagaradona, T., Bassig, B. A., Hosgood, D., Vermeulen, R. C. H., Ning, B., Seow, W. J., Hu, W., Portengen, L., Wong, J., Shu, X. O., Zheng, W., Appel, N., Gao, Y. T., Cai, Q. Y., Yang, G., Chen, Y., Downward, G., Li, J., Yang, K. & McCullough, L. & 3 others, Silverman, D., Huang, Y. & Lan, Q., 15 Nov 2022, In: *BMJ Open*. 12, 11, e058714.

Exposure to diesel engine exhaust and alterations to the Cys34/Lys525 adductome of human serum albumin

Wong, J. Y. Y., Imani, P., Grigoryan, H., Bassig, B. A., Dai, Y., Hu, W., Blechter, B., Rahman, M. L., Ji, B. T., Duan, H., Niu, Y., Ye, M., Jia, X., Meng, T., Bin, P., Downward, G., Meliefste, K., Leng, S., Fu, W. & Yang, J. & 10 others, Ren, D., Xu, J., Zhou, B., Hosgood, H. D., Vermeulen, R., Zheng, Y., Silverman, D. T., Rothman, N., Rappaport, S. M. & Lan, Q., Oct 2022, In: *Environmental Toxicology and Pharmacology*. 95, 103966.

Investigation of the use of a sensor bracelet for the presymptomatic detection of changes in physiological parameters related to COVID-19: an interim analysis of a prospective cohort study (COVI-GAPP)

1 Jun 2022, In: *BMJ Open*. 12, 6, p. 1-12 e058274.

The performance of wearable sensors in the detection of SARS-CoV-2 infection: a systematic review

Mitratza, M., Goodale, B. M., Shagadatova, A., Kovacevic, V., van de Wijgert, J., Brakenhoff, T. B., Dobson, R., Franks, B., Veen, D., Folarin, A. A., Stolk, P., Grobbee, D. E., Cronin, M. & Downward, G. S., May 2022, In: *The Lancet Digital Health*. 4, 5, p. e370-e383

Estimation of the Exposure–Response Relation between Benzene and Acute Myeloid Leukemia by Combining Epidemiologic, Human Biomarker, and Animal Data

Scholten, B., Portengen, L., Pronk, A., Stierum, R., Downward, G. S., Vlaanderen, J. & Vermeulen, R., 1 Apr 2022, In: *Cancer Epidemiology Biomarkers and Prevention*. 31, 4, p. 751-757 7 p.

Household air pollution from, and fuel efficiency of, different coal types following local cooking practices in Xuanwei, China

Zhang, Y., Meliefste, K., Hu, W., Li, J., Xu, J., Ning, B., Yang, K., Chen, Y., Liu, D., Wong, J., Rahman, M., Rothman, N., Huang, Y., Cassee, F., Vermeulen, R., Lan, Q. & Downward, G. S., 1 Dec 2021, In: *Environmental Pollution*. 290, 9 p., 117949.

Elevated Alu retroelement copy number among workers exposed to diesel engine exhaust

Wong, J. Y. Y., Cawthon, R., Dai, Y., Vermeulen, R., Bassig, B. A., Hu, W., Duan, H., Niu, Y., Downward, G. S., Leng, S., Ji, B. T., Fu, W., Xu, J., Meliefste, K., Zhou, B., Yang, J., Ren, D., Ye, M., Jia, X. & Meng, T. & 6 others, Bin, P., Hosgood, H. D., Silverman, D. T., Rothman, N., Zheng, Y. & Lan, Q., 1 Nov 2021, In: *Occupational and environmental medicine*. 78, 11, p. 823-828 6 p.

Long-Term Exposure to Ultrafine Particles and Particulate Matter Constituents and the Risk of Amyotrophic Lateral Sclerosis

Yu, Z., Peters, S., van Boxmeer, L., Downward, G. S., Hoek, G., Kioumourtzoglou, M.-A., Weiskopf, M. G., Hansen, J., van den Berg, L. H. & Vermeulen, R. C. H., Sept 2021, In: *Environmental Health Perspectives*. 129, 9, 097702.

Residential traffic exposure and lymphohematopoietic malignancies among children in the city of São Paulo, Brazil: An ecological study

Ribeiro, A. G., Vermeulen, R., Cardoso, M. R. A., Latorre, M. D. R. D. D. O., Hystad, P., Downward, G. S. & Nardocci, A. C., Feb 2021, In: *Cancer Epidemiology*. 70, 101859.

Characterization of outdoor air pollution from solid fuel combustion in Xuanwei and Fuyuan, a rural region of China

Hu, W., Downward, G., Wong, J. Y. Y., Reiss, B., Rothman, N., Portengen, L., Li, J., Jones, R. R., Huang, Y., Yang, K., Chen, Y., Xu, J., He, J., Bassig, B., Seow, W. J., Hosgood, H. D., Zhang, L., Wu, G., Wei, F. & Vermeulen, R. & 1 others, Lan, Q., 1 Dec 2020, In: *Scientific Reports*. 10, 1, 11335.

Personal black carbon and ultrafine particles exposures among high school students in urban China

Zhou, Y., Shao, Y., Yuan, Y., Liu, J., Zou, X., Bai, P., Zhan, M., Zhang, P., Vlaanderen, J., Vermeulen, R. & Downward, G. S., Oct 2020, In: *Environmental Pollution*. 265, Part A, 114825.

Household fuel use and adverse pregnancy outcomes in a Ghanaian cohort study

Weber, E., Adu-Bonsaffoh, K., Vermeulen, R., Klipstein-Grobusch, K., Grobbee, D. E., Browne, J. L. & Downward, G. S., 22 Feb 2020, In: *Reproductive health*. 17, 1, 29.

Ischaemic heart disease and stroke mortality by specific coal type among non-smoking women with substantial indoor air pollution exposure in China

Bassig, B. A., Hosgood, H. D., Shu, X. O., Vermeulen, R., Chen, B. E., Katki, H. A., Seow, W. J., Hu, W., Portengen, L., Ji, B. T., Wong, J. Y. Y., Ning, B., Downward, G. S., Li, J., Yang, K., Yang, G., Gao, Y. T., Xiang, Y. B., Nagaradona, T. & Zheng, W. & 3 others, Silverman, D. T., Huang, Y. & Lan, Q., 1 Feb 2020, In: *International journal of epidemiology*. 49, 1, p. 56-68 13 p.

Constituents of household air pollution and risk of lung cancer among never-smoking women in Xuanwei and Fuyuan, China

Vermeulen, R., Downward, G. S., Zhang, J., Hu, W., Portengen, L., Bassig, B. A., Hammond, S. K., Wong, J. Y. Y., Li, J., Reiss, B., He, J., Tian, L., Yang, K., Seow, W. J., Xu, J., Anderson, K., Ji, B. T., Silverman, D., Chanock, S. & Huang, Y. & 2 others, Rothman, N. & Lan, Q., Sept 2019, In: *Environmental Health Perspectives*. 127, 9

The establishment of the Household Air Pollution Consortium (HAPCO)

Hosgood, H. D., Klugman, M., Matsuo, K., White, A. J., Sadakane, A., Shu, X. O., Lopez-Ridaura, R., Shin, A., Tsuji, I., Malekzadeh, R., Noisel, N., Bhatti, P., Yang, G., Saito, E., Rahman, S., Hu, W., Bassig, B., Downward, G., Vermeulen, R. & Xue, X. & 15 others, Rohan, T., Abe, S. K., Broët, P., Grant, E. J., Dummer, T. J. B., Rothman, N., Inoue, M., Lajous, M., Yoo, K. Y., Ito, H., Sandler, D. P., Ashan, H., Zheng, W., Boffetta, P. & Lan, Q., 1 Jul 2019, In: *Atmosphere*. 10, 7, 422.

Lung cancer risk by geologic coal deposits: A case-control study of female never-smokers from Xuanwei and Fuyuan, China

Wong, J. Y. Y., Downward, G. S., Hu, W., Portengen, L., Seow, W. J., Silverman, D. T., Bassig, B. A., Zhang, J., Xu, J., Ji, B. T., Li, J., He, J., Yang, K., Tian, L., Shen, M., Huang, Y., Vermeulen, R., Rothman, N. & Lan, Q., 15 Jun 2019, In: *International Journal of Cancer*. 144, 12, p. 2918-2927 10 p.

Household coal combustion, indoor air pollutants, and circulating immunologic/inflammatory markers in rural China

Wong, J. Y. Y., Bassig, B. A., Hu, W., Seow, W. J., Shiels, M. S., Ji, B. T., Downward, G. S., Huang, Y., Yang, K., Li, J., He, J., Chen, Y., Hildesheim, A., Vermeulen, R., Lan, Q. & Rothman, N., 19 Mar 2019, In: *Journal of Toxicology and Environmental Health - Part A: Current Issues*. 82, 6, p. 411-421 11 p.

Incidence and mortality for respiratory cancer and traffic-related air pollution in São Paulo, Brazil

Ribeiro, A. G., Downward, G. S., Freitas, C. U. D., Chiaravalloti Neto, F., Cardoso, M. R. A., Latorre, M. D. R. D. D. O., Hystad, P., Vermeulen, R. & Nardocci, A. C., Mar 2019, In: *Environmental Research*. 170, p. 243-251 9 p.

Occupational exposure to indoor air pollution among bakery workers in Ethiopia; A comparison of electric and biomass cookstoves

Downward, G. S., van der Zwaag, H. P., Simons, L., Meliefste, K., Tefera, Y., Carreon, J. R., Vermeulen, R. & Smit, L. A. M., Feb 2018, In: *Environmental Pollution*. 233, p. 690-697 8 p.

Personal exposure to fine particulate matter and benzo[a]pyrene from indoor air pollution and leukocyte mitochondrial DNA copy number in rural China

Wong, J. Y. Y., Hu, W., Downward, G. S., Seow, W. J., Bassig, B. A., Ji, B. T., Wei, F., Wu, G., Li, J., He, J., Liu, C. S., Cheng, W. L., Huang, Y., Yang, K., Chen, Y., Rothman, N., Vermeulen, R. C. & Lan, Q., 1 Sept 2017, In: *Carcinogenesis*. 38, 9, p. 893-899 7 p.

Sleep duration across the adult lifecourse and risk of lung cancer mortality: A cohort study in xuanwei, China

Wong, J. Y., Bassig, B. A., Vermeulen, R., Hu, W., Ning, B., Seow, W. J., Ji, B. T., Downward, G. S., Katki, H. A., Barone-Adesi, F., Rothman, N., Chapman, R. S. & Lan, Q., Jun 2017, In: *Cancer Prevention Research*. 10, 6, p. 327-336 9 p.

Quartz in ash, and air in a high lung cancer incidence area in China

Downward, G. S., Hu, W., Rothman, N., Reiss, B., Tromp, P., Wu, G., Wei, F., Xu, J., Seow, W. J., Chapman, R. S., Lan, Q. & Vermeulen, R., 2017, In: *Environmental Pollution*. 221, p. 318-325 8 p.

Indoor concentrations of nitrogen dioxide and sulfur dioxide from burning solid fuels for cooking and heating in Yunnan Province, China

Seow, W. J., Downward, G. S., Wei, H., Rothman, N., Reiss, B., Xu, J., Bassig, B. A., Li, J., He, J., Hosgood, H. D., Wu, G., Chapman, R. S., Tian, L., Wei, F., Caporaso, N. E., Vermeulen, R. & Lan, Q., 1 Oct 2016, In: *Indoor air*. 26, 5, p. 776-783 8 p.

Outdoor, indoor, and personal black carbon exposure from cookstoves burning solid fuels

Downward, G. S., Hu, W., Rothman, N., Reiss, B., Wu, G., Wei, F., Xu, J., Seow, W. J., Brunekreef, B., Chapman, R. S., Qing, L. & Vermeulen, R., 1 Oct 2016, In: *Indoor air*. 26, 5, p. 784-795 12 p.

Gene-expression profiling of buccal epithelium among non-smoking women exposed to household air pollution from smoky coal

Wang, T. W., Vermeulen, R. C. H., Hu, W., Liu, G., Xiao, X., Alekseyev, Y., Xu, J., Reiss, B., Steiling, K., Downward, G. S., Silverman, D. T., Wei, F., Wu, G., Li, J., Lenburg, M. E., Rothman, N., Spira, A. & Lan, Q., 1 Dec 2015, In: *Carcinogenesis*. 36, 12, p. 1494-1501 8 p.

Polycyclic aromatic hydrocarbon exposure in household air pollution from solid fuel combustion among the female population of Xuanwei and Fuyuan counties, China

Downward, G. S., Hu, W., Rothman, N., Reiss, B., Wu, G., Wei, F., Chapman, R. S., Portengen, L., Qing, L. & Vermeulen, R., 16 Dec 2014, In: *Environmental Science and Technology*. 48, 24, p. 14632-14641 10 p.

Heterogeneity in coal composition and implications for lung cancer risk in Xuanwei and Fuyuan counties, China

Downward, G. S., Hu, W., Large, D., Veld, H., Xu, J., Reiss, B., Wu, G., Wei, F., Chapman, R. S., Rothman, N., Qing, L. & Vermeulen, R., Jul 2014, In: *Environment International*. 68, p. 94-104 11 p.

Household air pollution and lung cancer in China: A review of studies in Xuanwei

Seow, W. J., Hu, W., Vermeulen, R., Dean Hosgood, H., Downward, G. S., Chapman, R. S., He, X., Bassig, B. A., Kim, C., Wen, C., Rothman, N. & Lan, Q., 2014, In: *Chinese Journal of Cancer*. 33, 10, p. 471-475 5 p.

Personal and indoor PM_{2.5} exposure from burning solid fuels in vented and unvented stoves in a rural region of China with a high incidence of lung cancer

Hu, W., Downward, G. S., Reiss, B., Xu, J., Bassig, B. A., Hosgood, H. D., Zhang, L., Seow, W. J., Wu, G., Chapman, R. S., Tian, L., Wei, F., Vermeulen, R. & Lan, Q., 2014, In: *Environmental Science and Technology*. 48, 15, p. 8456-8464 9 p.