PEAK Urban:

Global data to inform local decision making

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Cities

Local centres reflecting our core global challenges and opportunities

PEAK Urban

Overview

Aims:

To build **skilled capacity for decision making** on urban futures by:

- generating **new research** grounded in the logic of urban complexity,
- fostering **new leaders** that draw on different disciplinary perspectives to address the challenges found in the 21st century city

Academic partners:

- University of Oxford – Anthropology (COMPAS), Population Health (George Institute), Mathematical Institute, Geography (Transport Studies Unit)
- Peking University (China)
- University of Cape Town (South Africa)
- Indian Institute for Human Settlements (India)
- EAFIT University (Colombia)

PEAK Urban – urban health matters

High-level challenges

- Disease and poor health – consequences several environmental factors, impacts economy and society

- Local information about environmental factors contributing to poor health or risk factors often limited, in particular for city planners and policy makers, because of lack of granularity of information and time lag that are induced by costly and infrequent surveys

PEAK Urban – Focus on health

Vision: Planetary urban health map

Global ‘big data’ to inform **local** decision making

Big Data

Electronic health records, surveys, remote sensors

Technologies

Statistics, machine learning, software engineering, HPC

Multidisciplinary team

Computer science, engineering, clinical medicine, epidemiology, global health

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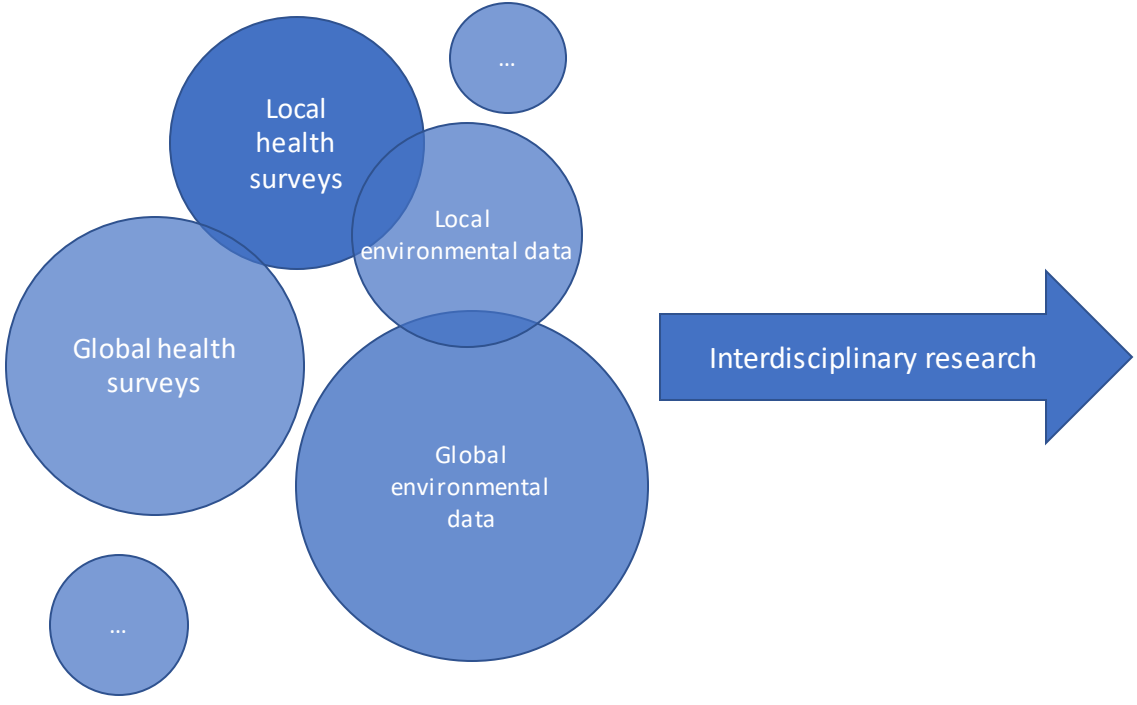
Ambitious plan in need for further collaboration



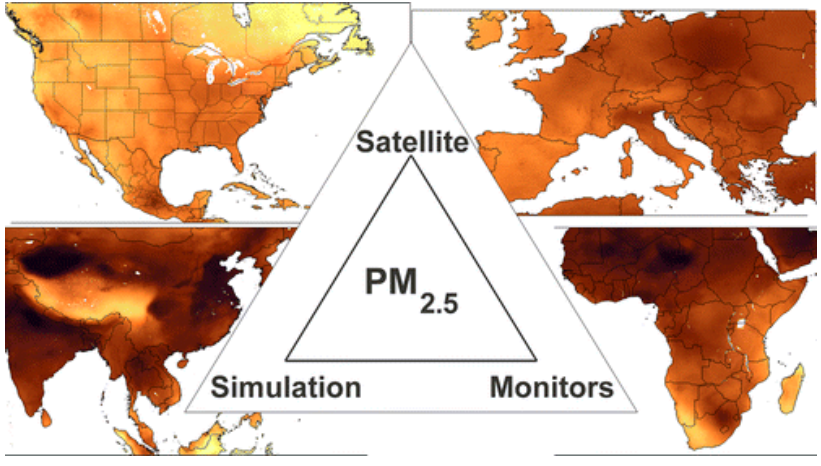
Platform for information sharing to local and global stakeholders on disease burden related to environmental risk factors

Associational analysis of risk factors and disease outcomes

Prediction and projection

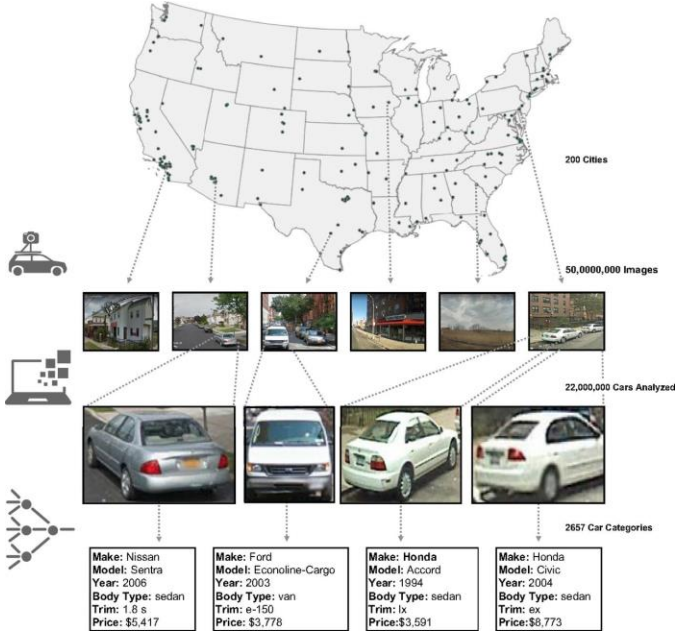
Tackle gaps in information through novel technologies and global data

Combination of multiple and multimodal sources for high resolution air pollution estimates



Van Donkelaar et al. Environ. Sci. Technol. 50, 7, 3762-3772

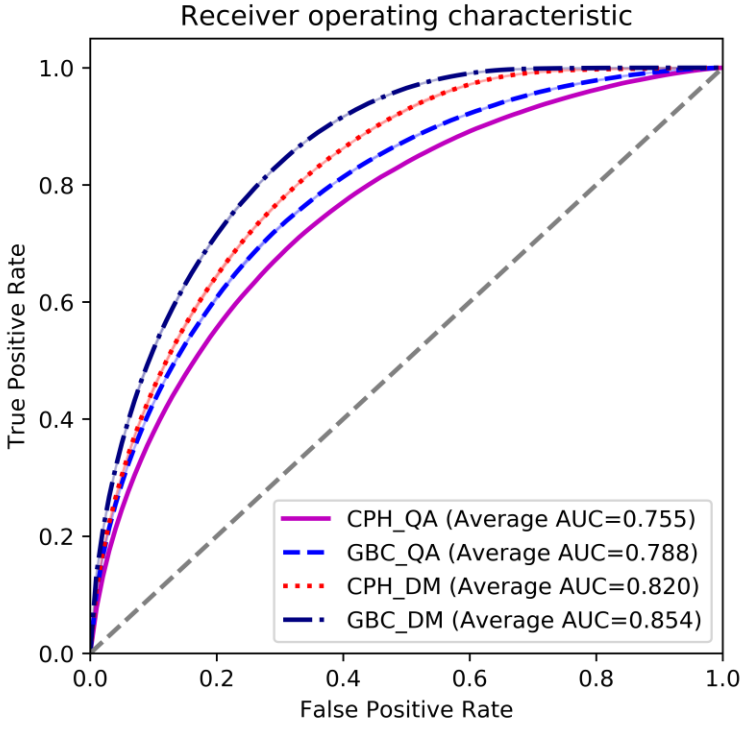
Estimation of demographic make-up of neighborhood's with Google Street View

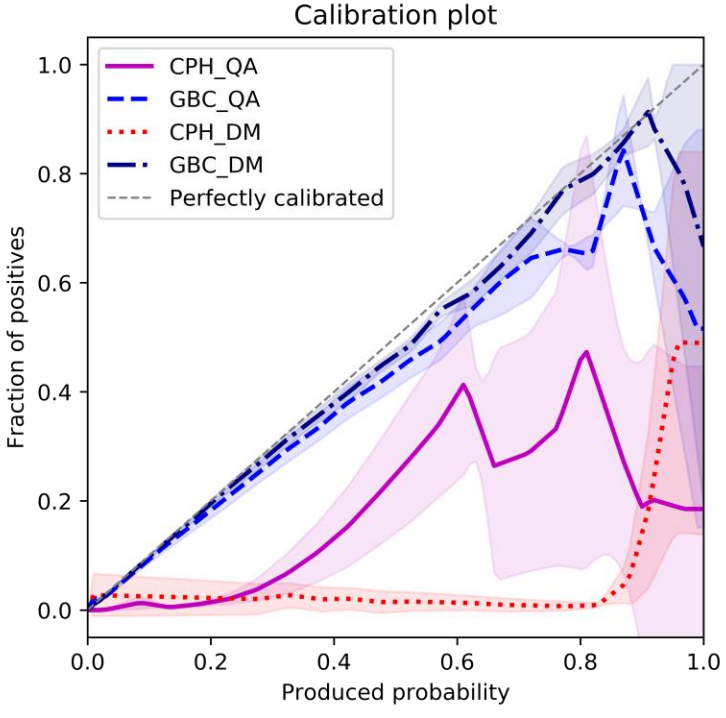


Gebru et al. PNAS. 2017

Embrace complexity with novel technologies and methodologies

Example: prediction of unscheduled admission to hospital in the general population





Rahimian et al. unpublished

Collaboration