Research partner

- Imperial College London

- John Polak
  Head of Centre for Transport Studies

- Key research interests
  - Transport data collection methods
  - Analysis and modeling of travel behavior
  - Behavioral dynamics and traveler learning
  - Trip scheduling and activity based modeling
  - Micro-simulation modeling
Collaboration evolution

Original

- Location aware activity detection
- Partially labeled GPS activity stream – gap completion & extension

Revised

- Mobile environmental sensor networks
- Partially labeled GPS enabled sensor log – gap completion & extension
Research project

- Mobile Environmental Sensing System Across Grid Environments (MESSAGE)
  - Grid of sensors
    - Fixed point infrastructure
    - Buses
    - Cell phones
  - Collect environmental quality data

- Project environmental action areas to suggest alternate routes for asthmatics
Project problem
Mutually beneficial collaboration

- Extensive GPS enabled sensor logs
  - Dynamic patterns
- Missing data problem
  - Inferring partial sets using surrounding partial sets
- Individual level prediction of data of interest
  - Person’s cell can auto-“subscribe” to alerts of interest based on predicted route/destination
Collaboration ongoing

- Data collection effort ramping up this Fall
  - Missing data & projection of immediate interest
- Traveler pattern analysis and subscriptions will continue throughout project
Questions?