

**September 24, 2004 at 12.00 Noon  
Zimmer Lounge, Maxcy Hall**

**Spatial Structure in the Social Sciences Colloquium Series**

## **Mobility Constraints and the Distributional Consequences of Particulate Matter**

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**Abstract:** Wage-hedonic techniques are regularly used to determine willingness-to-pay to avoid environmental disamenities, like those associated with particulate matter and other forms of air pollution. A key assumption underlying these techniques is that individuals face an unconstrained choice over alternative locations. Evidence suggests that this is not the case and that, moreover, certain groups face disproportionate constraints on mobility. This has the potential to skew hedonic measurements toward finding smaller costs of pollution, especially for the immobile (typically disadvantaged) groups. We propose a model of residential sorting that recovers estimates of mobility costs and uses them to correct this source of bias. The model is applied to data from the micro samples of the 1990 and 2000 US Censuses, and the results are used to measure the welfare cost of a marginal increase in PM10. Results show a significant downward bias in WTP calculated with the wagehedonic technique, particularly for those with less education.

**Keywords:** Particulate Matter, Mobility Costs, Willingness to Pay, Wage-Hedonics, Residential Sorting, Discrete Choice Models

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