

## **PROPOSAL: IMPROVED COOKSTOVES TO COMBAT INDOOR AIR POLLUTION: A RANDOMIZED INTERVENTION STUDY IN BANGLADESH**

**A. Mushfiq Mobarak, Assistant Professor  
School of Management**

Acute respiratory illnesses related to indoor air pollution (IAP) are the leading killer of children under 5 worldwide. This research project conducted field experiments investigating the behavioral underpinnings of IAP in the developing world and to estimate its impacts on human health and other socio-economic outcomes. Over half of the world's population and over 75% of South Asians use unimproved cookstoves and biomass fuels for cooking. Biomass combustion within the household is the main cause of IAP, so women who cook and the infants and children they care for are particularly affected. If the health consequences of biomass combustion are so severe and inexpensive local alternatives exist, why don't households use alternative fuels or stoves to protect themselves? And given the confounding forces present in epidemiological studies to date, how far-reaching are the true health consequences of indoor air pollution? Answering these questions is critical for establishing environmental and health policy priorities and for identifying effective and sustainable interventions to combat indoor smoke. In partnership with a leading NGO in Bangladesh (BRAC), this collaborative initiative draws upon expertise in economics, engineering and public health and "local knowledge" (through both a Yale Professor originally from Bangladesh and Bangladeshi field workers) to conduct an intervention study that randomly assigns a variety of incentives to adopt improved cookstoves to rural Bangladeshi households. This approach will both identify the important constraints to new technology adoption and will also create randomized variation in IAP that can subsequently be used for studying its impact on health and socio-economic outcomes.

During summer 2009 we will be: (a) analyzing data from the first round of the intervention, which took place in 2008, and (b) conducting a second round of randomized experiments in rural Bangladesh on the friends/relatives/neighbors of the 'first round households' to understand whether social networks are a powerful mechanism to disseminate new technology. My plan is to have the undergraduate student help with data analysis using Stata, and using those results, to help design the second round of the survey. For a more theoretically inclined student, we would also welcome help thinking through a theoretical (economics or psychology) basis for observed patterns in household behavior.