UNC Public Policy Faculty Receives $2.5 Million from NIEHS

UNC Public Policy Professor Sudhanshu Handa and Assistant Professor Pamela Jagger received $2.5 million in funding from the National Institute of Environmental Health Sciences (NIEHS) to support their project, *The Health and Poverty Effects of a Large-Scale Cookstove Initiative in Rwanda*. The project evaluates the impact of a private sector cookstove and fuel distribution intervention on exposure to airborne pollutants, health, and poverty.

*Household air pollution (HAP)* is responsible for more than 4 million deaths annually. In sub-Saharan Africa burning of solid fuels for cooking is the second most important risk factor for burden of disease. In *Rwanda* where households use fuelwood, charcoal, and other biomass for cooking, HAP is the primary risk factor for burden of disease including infectious diseases, cardio and circulatory diseases, chronic respiratory infection, cancer and other non-communicable diseases. Dependence on biomass has other serious implications for human and environmental well-being including limiting the amount of time women and girls who do most fuel collection have for schooling and other productive activities, environmental degradation from charcoal production and fuelwood collection, and contributing black carbon, a catalyst for regional climate change, to the atmosphere.

Drs. *Handa* and *Jagger* are working closely with co-investigators Drs. Leena Nylander-French and Karin Yeatts who are faculty in Environmental Sciences and Engineering and Epidemiology respectively in the *Gillings School of Global Public Health*. The aims of the research are threefold. They are evaluating:

- The impact of adoption and use of efficient biomass burning stoves and pellets on carbon monoxide (CO), particulate matter 2.5 (PM$_{2.5}$), and polycyclic aromatic hydrocarbons (PAH) emissions;
- Health impacts of using cleaner cooking technologies on incidence of respiratory illness, chronic obstructive pulmonary disease, burns, and eye irritation;
- And the impact of access to cleaner cooking technologies and fuels on economic well-being and time use, especially for women and children.

The project is novel in that they are partnering with a private sector initiative with a unique business model for promoting cleaner cooking. *Inyenyeri*, a private social entrepreneurship venture, contracts with households who agree to cook with gasifier stoves and use fuel pellets produced in the Inyenyeri factory. It will provide free cookstoves to over 50,000 households in Western Rwanda and implement a fuel pellet business over the next three years. Megan Strickland, who graduated from UNC-CH with an Honors BA in Public Policy works with Inyenyeri. She made the initial connection between Drs. Handa and Jagger and Inyenyeri, which has resulted in this exciting collaboration.