NIH Funds Highway Pollution & Health Study in Boston, Somerville

Newswise — Tufts University researchers and five Boston-area community groups received a National Institutes of Health (NIH) grant to study the health effects of pollution exposure in neighborhoods adjacent to major highways. The 5-year, $2.5 million grant from the National Institute of Environmental Health Science (NIEHS) will fund a study of four communities, including Boston's Chinatown and Somerville, MA.

A steering committee comprised of representatives from the Somerville Transportation Equity Partnership (STEP), the Latin American Health Institute, the Chinese Progressive Association, the Committee for Boston Public Housing and the Chinatown Resident Association will lead the research in collaboration with principal investigator Doug Brugge, PhD. Brugge, director of the Tufts Community Research Center at the Jonathan M. Tisch College of Citizenship, is an associate professor in the Department of Public Health and Family Medicine at the Tufts University School of Medicine.

STEP initially approached Brugge about the impact of highway pollution on Somerville neighborhoods next to Interstate 93 - the major highway leading in and out of Boston. "Meeting with other communities in the same situation, a literature review by Tufts faculty and more recent pilot studies on Somerville's I-93 pollution all set the foundation for the great leap forward provided by this NIEHS grant," says Wig Zamore of STEP. "We feel fortunate to be included in this scientific effort to learn more about these understudied exposures and to help better define their most serious impacts." By actively engaging the Boston and Somerville communities, the Tufts investigators predict the study will yield results that more traditional research methods would not achieve.

As part of the study, to be known as the Community Assessment of Freeway Exposure and Health (CAFEH), participants will be asked to submit written surveys and blood samples to be tested for evidence of heart and lung disease. "Many people live close to I-93 and I-95 and they may well be exposed to these tiny particles, but they aren't aware of it," says Bart Laws, PhD, senior investigator at the Latin American Health Institute. "The particles are invisible and odorless."

Additionally, co-investigators from Tufts' School of Engineering plan to outfit a van with air monitoring instrumentation that can measure concentrations of a variety of chemical pollutants. "Pollution levels are highest on the highway and gradually decrease to background levels as they drift away from the cars on the road," says Brugge. "The air monitoring van will measure pollution levels within 200 to 300 meters of highways in communities where most of the residents can see the highway from their homes."

In Boston, both I-93 and the Massachusetts Turnpike (I-90) border Chinatown. "Some residents have lived at the junction of two major highways for decades," says Lydia Lowe, executive director of the Chinese Progressive Association. "What does it mean for the long-term health of Chinatown residents and what are the implications for future development and planning for our community? These are some of the questions we hope this study can help us to explore."

Brugge says there is a large and growing body of scientific evidence that shows ambient pollution, even at levels below those set by the United States Environmental Protection Agency, is harmful to health. "Most of the studies to date examine regional effects of pollution," Brugge says. "Only recently has research begun to suggest that highly concentrated local sources, such as highways may be even more hazardous. To our knowledge, much of the work to date on near highway exposures and health has come from Southern California, so the project represents an expansion to the northeastern United States."

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