

# CSWS

## Research Matters

### Maya Women Breathing Easier: Reducing Indoor Air Pollution in Highland Guatemala

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Home may be where the hearth is, but in many Maya homes in highland Guatemala that same hearth has a deadly side to it—spewing particulates that damage the respiratory and circulatory systems particularly of the women and children who spend long hours in smoke-filled rooms. Children can also fall into these open fires and incur disfiguring burns. This situation is not limited to Guatemala, of course, since about half the world’s population still relies on biomass fuels—wood, dung, and crops—and coal for heat and for cooking fires. Globally, the most important cause of death in children under five is pneumonia, often stemming from acute lower respiratory infections. Therefore, research into indoor air pollution in Guatemala has the potential for improving lives on a vastly broader scale.



My recent documentary *Respire Guatemala (Breathe, Guatemala)*, 2006, is a study of a cooperative research project carried out with personnel from the Universidad del Valle, Guatemala, University of California, Berkeley, and University of California, San Francisco. RESPIRE (“to breathe” in Spanish) is an acronym for this joint research project, “Randomized Exposure Study of Pollution Indoors and Respiratory Effects.” RESPIRE was the first component of a larger study called CRECER (“to grow up” in Spanish), which also stands for “Chronic Respiratory Effects of Early Childhood Exposure to Respirable Particulate Matter.”

The World Health Organization helped determine the need for these studies to target rural Guatemala, based on the extremely high infant mortality and pneumonia rates of the region when compared globally. RESPIRE had as its focus measuring and reducing indoor air pollution in 500 Maya homes in San Lorenzo and surrounding communities in the department of San Marcos. Here, open indoor fires are the norm, and we found exceptionally high levels of particulates polluting the air inside these homes. While some homes have open windows and doorways, smoke from open fires still tends to fill the room.

Improved wood-burning cook stoves and exhaust pipes are now gradually replacing the open fires inside homes in San Marcos. The benefits are many. Stovepipes not only carry particulates outside, but a simple guard around the pipe reduces accidental burns. The new cook stove, being elevated, puts the fire out of harm’s way and reduces the squatting and bending that a fire on the ground requires.

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## Research Matters

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Specially designed and built cook stoves such as these have more than health benefits. They also reduce fuel consumption by up to 70 percent, resulting in a reduction in both deforestation and the foraging and transporting of wood by women and children. The new stoves funnel oxygen to the fire very efficiently and can burn not only wood (and wood scraps), but also corncobs and other readily accessible crop byproducts.

One of my next documentary film projects will have a focus on the Eugene-based Duffy Hughes Memorial Stove Project, linked to Helps International, which has installed hundreds of stoves in and around Sololá, Guatemala, another part of the country where indoor air pollution is notable. Stemming in part from my interest in this study abroad concept, Helps stove teams are incorporating University of Oregon students during spring break this year.

To create a documentary such as *Respire Guatemala* is a lengthy, involved project. It begins with grant writing or soliciting donations to cover production costs. It includes intensive research on the potential project, reading previous studies as well as proposals and hypotheses put together by the principal investigators. It requires preparing for



field work by researching the culture and setting where the projects will take place, considering ethical issues, and making a local needs-based assessment. Next, I spend weeks of fieldwork on the ground, traveling with and observing the investigators, helping them in innumerable ways, and getting to know the people and conditions under study. I serve as my own camera person, shooting and editing extensive footage, writing a narration, finding a narrator, recording that and editing the narrative onto the video, translating interviews, and creating subtitles. In essence, I must be the producer, the director, and much more.

Before 2005 I had never been to Guatemala, a country I found to be stunningly beautiful and rich in its

cultural diversity. It was a wonderful experience finding myself in the midst of women speaking Mam, a Mayan language. Being among indigenous people was not an entirely new experience, since I grew up in the Andes and had conducted research in indigenous Andean communities. Over the years I had completed several documentaries on various aspects of Andean culture, ritual, and folklore, among them *Ch'ullacuy*, *Nakaj*, and *Textiles in the Southern Andes*. More recently, I have joined a Research Interest Group at the Center for the Study of Women in Society, the "Americas" RIG, which is supporting my research in Oaxaca, Mexico, another site rich in indigenous cultures and a fertile site for research on gender.