Title: **Community Exposure to B(a)P and other PBTs from Agricultural Burning**

Submitted by: **- EPA Region 10: Office of Air Quality**
- Office of Research and Development
- Agency for Toxic Substances and Disease Registry
- Washington State University, Pullman

Background:
In agricultural communities of the Pacific Northwest, field burning (particularly wheat stubble) is a common practice for preparing the fields for planting. The air quality impacts as well as the exposures of citizens in the nearby farming communities are not well understood. There has been little air quality monitoring conducted in these rural areas and, given the wide spatial variation in smoke levels during the burn seasons, the monitoring that has been conducted has rarely captured smoke for burning fields. There is also little known about the chemical composition of field smoke, in particular there has been little work conducted to examine the PAH and phenol content of wheat stubble fires.

There is currently a great deal of social, legal and political controversy in the Pacific Northwest about the uses and health effects of agricultural burning. Currently, EPA has limited regulatory authority to restrict or limit agricultural burning and therefore must rely on voluntary efforts by either growers or states to protect public health. Therefore, we believe that good information about the possible exposure and health effects from agricultural burning will encourage voluntary efforts by growers or encourage states to introduce some restrictions.

Summary, Objectives and Tasks:

The project will measure air quality impacts near burning agricultural fields and exposure of selected nearby communities.

The objectives of the proposed work are to:

(1) Quantitate PM and B(a)P and selected toxic and carcinogenic PAHs, irritating and toxic phenols, and other PBTs in smoke downwind from burning wheat stubble.

(2) Assess exposure of farm families and other impacted community members to PM an PAHs from agricultural burning.

These objectives would be accomplished by measuring particulate air quality and quantifying B(a)P, other toxic and carcinogenic PAHs in nearby communities and surrounding areas during the burn season. Human exposure would be assessed directly for a limited number of subjects by conducting personal exposure monitoring and measuring relevant health outcomes for citizens potentially affected by the smoke.

REQUESTED: $100,000
RECEIVED: $50,000 PLUS $15,000 FOR DIOXIN TESTING