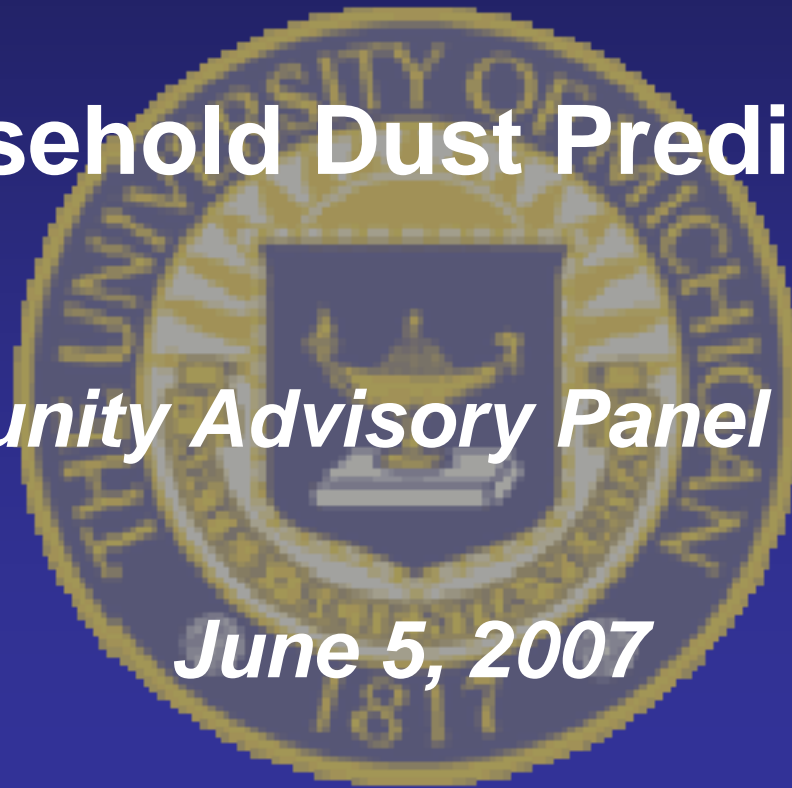


# **The University of Michigan Dioxin Exposure Study**

**Household Dust Predictors**

*Community Advisory Panel Meeting*

*June 5, 2007*



# Household dust predictors

## Purpose:

To determine what factors **predict dioxin concentrations in household dust.**

Dioxin concentrations are measured in picograms of dioxin congener per gram of household dust (ppt).



# Household dust predictors

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Floors/carpets from 764 households were vacuumed

- 534 homes in Midland and Saginaw counties



M/S Floodplain – 205 homes

M/S Near Floodplain – 161 homes

Other M/S – 168 homes

Midland Plume – 32 homes

- 198 homes in Jackson and Calhoun counties

# Household dust TEQ<sub>DFP29-2005</sub> concentration

## Factors associated with higher household dust TEQ:

- Higher house perimeter top 1" soil dioxin concentration
  - Older floor surfaces
  - Household dust sampling in the fall (versus spring/summer)
  - Cleaner floors (lower dust loading)
  - Living in Jackson and Calhoun counties
- 
- Trash burning on the property
  - Not using weed killers on the property
  - Remediation for dioxins
  - Flooring that was not replaced after a flood

These factors each explained less than 1% of the variation in household dust TEQ

# Household dust 2378-TCDD concentration

## Factors associated with higher household dust 2378-TCDD concentrations:

- Higher house perimeter top 1" soil dioxin concentration
- Cleaner floors (lower dust loading)
- Household dust sampling in the fall (versus spring/summer)
- Living in the Midland Plume
- Not having indoor/outdoor pets
- Trash burning on the property
- Work at a chemical company other than Dow
- Living with a Dow worker
- Water activities in the contaminated areas
- Remediation for dioxins

These factors each explained less than 1% of the variation in household dust 2378-TCDD

## Household dust 12378-PeCDF concentration

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### Factors commonly associated with higher household dust 12378-PeCDF concentrations:

- Household dust sampling in the fall (versus spring/summer)
  - Cleaner floors (lower dust loading)
  - Higher maximum soil concentration on the property
  - Older floor surfaces
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- Remediation
  - No cats at the residence

These factors each explained less than 1% of the variation in household dust 12378-PeCDF

## Household dust PCB 126 concentration

### Factors commonly associated with higher household dust PCB 126 congener concentrations:

- Higher maximum soil dioxin concentration on the property
- Older floor surfaces
- High pile carpets (velvet carpet)
- Living in Jackson and Calhoun counties (versus M/S Floodplain)
- Not having indoor/outdoor pets
- Having a vegetable or flower garden on the property
- Flooring that was not replaced after a flood
- Remediation for dioxins

These factors each explained less than 1% of the variation in household dust PCB 126

The End