EOHSI Study Personnel

- **Principal Investigators**
  - Dr. Paul Lioy
  - Dr. Michael Gochfeld

- **Co-Investigators**
  - Dr. Stuart Shalat
  - Dr. Zhi-hua (Tina) Fan

- **Recruitment Coordinators**
  - Dr. Kathy Black
  - Ms. Marta Hernandez
Human Exposure Science

Our Division’s Operating Definition of Human Exposure Science*: studies human contact with chemical, physical or biological agents occurring in their environments, and advances knowledge of the mechanisms and dynamics of events either causing or preventing adverse health outcomes.

*Journal of Exposure Science & Environmental Epidemiology
Definitions

**Exposure**
Occurs when a person comes into contact with a chemical, biological or physical agent.

**Exposure pathway**
Is how the substance moves from the source to people.

**Exposure route**
How a substance contacts the body (inhalation, ingestion, dermal)
Many chromium waste sites are located in Hudson County, NJ.

- Only certain types of chromium may cause illnesses, including cancer.
- In the past it was difficult to determine which type of chromium was present.

Some chromium waste sites were capped.

There are concerns that capped sites cause exposure to residents and about what type and how much chromium is present in homes.
Results of Previous Studies

- Some people were exposed to chromium.
- Removal and containment of soils containing chromium at residential sites lowered levels in household dust and participant’s urine.
- Measurement of chromium in household dust is a good way to determine if there is potential exposure to chromium in the home.
Goals of the Current Study

- Determine if chromium is present in homes and use improved analysis to identify the type of chromium:
  - Hexavalent – lung carcinogen
  - Total chromium – hexavalent and trivalent

- Identify the pathways of exposure:
  - Air
  - Direct contact & track-in of dirt or dust
  - Leaching out of sites
Need for Community Input

- Identify the sites of concern
  - Site conditions observed by residents
  - Conditions observed in surrounding homes
  - Changes in the community and site conditions since the site was first identified

- Conduct sampling
  - Volunteer for in-home sampling
Identify Sites of Concern for Residential Exposure

- Review available data
  - Site size and status
  - Concentrations of chromium
  - State of remediation
  - Concentration of homes around the site
- Information from the Community
Sampling

- Air sampling on or near the waste sites
- Indoor dust sampling in volunteer homes near Chromium sites
Community Indoor Sampling

- Contact the residents
- Select a group of volunteers
- Complete questionnaires and in-home dust sampling
Home Visit – 1 Hour

- Questionnaire
- Dust collection – undisturbed surfaces from one or more of the following locations
  - Windowsill facing the waste site
  - Main living area
  - Basement
Analyses

- Dust Samples
  - Type of Chromium
  - Amount of Chromium

- Questionnaires
  - Identify Exposure pathways
  - Indoor Chromium contamination
  - Other sources of Chromium
Residential Results will be Presented to:

Participants
- Individual results from his/her home
- Comparison to pooled results

State & Community Groups
- Pooled results from home sampling
- General Statistical Analyses
Questions

How much does sampling cost?
- There is no cost to have your home sampled.

When do I get results?
- Because many homes will be sampled, it will take several months to analyze all the samples.
If we find high chromium in homes

Participant

- It means that there is a potential for exposure.
- We may ask for permission to take more samples.
- Using the pathway information, we will make recommendations about some steps you can take to reduce potential exposure until the exposure pathway is stopped at the source.
If we find high chromium in homes

State

- The site(s) near the homes is (are) a source of exposure.
- Actions must be taken on the site to prevent exposure.
- Follow-up studies may be needed to assure the community that the exposure has been stopped.
Interested Residents

- Sign-up sheet or,
- Toll-free number: 866-855-2712
  - Recording
  - Leave your name, phone number
  - English or Spanish