Spring House Worker Health Study

University of Minnesota
School of Public Health
Division of Environmental Health Sciences

Background

- Brain cancers a concern in Spring House workers
- Rohm and Haas conducts epidemiologic studies
  - Criticized by NIOSH and others
  - Seek outside assistance
- University of Minnesota selected to conduct study
- Dow purchases Rohm and Haas
  - New approach to study oversight

Study Questions

- Do Spring House workers have greater risk of death from certain diseases, specifically brain cancers and other diseases of the central nervous system?
- Are any diseases occurring in relation to specific occupational exposures in the research and development laboratory of at Spring House?

Approach

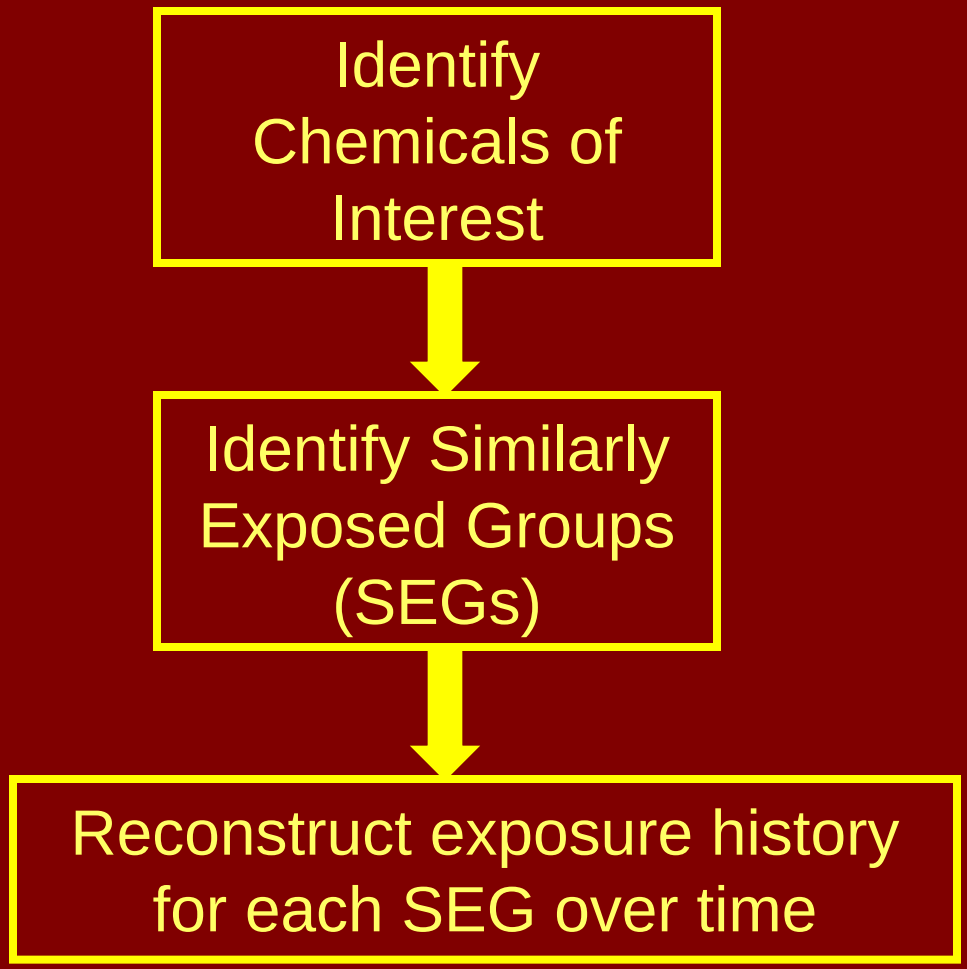
- Mortality study (causes of death)
  - All workers ever assigned to Spring House
  - Mortality study designed to reflect overall health of population
    - Not perfect
    - Feasible
    - Needed for further assessments
- Exposure reconstruction to evaluate risks associated with CNS mortality
  - Focus on what is unique at Spring House
  - Similar exposures in different work areas

Issues of Concern

- Who is in the study?
  - Assigned to work at Spring House
  - Represents health of people with similar exposures
  - Case finding limited to this population
- What about non-fatal cases?
  - Good question
  - Cancer incidence studies very difficult
  - Assessment of feasibility will be done
- Exposure assessment
  - **Can’t study all exposures**
  - **Focus on a few selected exposures**
  - Use methods to approximate exposures between groups over time
  - Input from local experts (current and former workers) including members of former stakeholder group

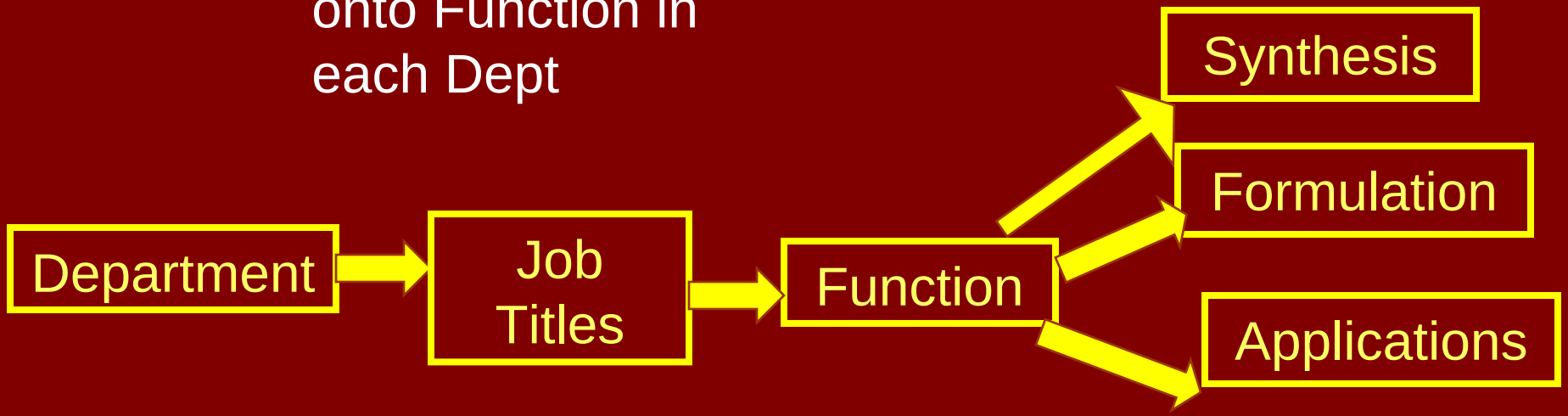
Exposure Assessment

Overall Strategy



Identify Similarly Exposed Groups (SEGs) First Round:

Map Job Titles onto Function in each Dept



Identifying Chemicals/Agents of Interest

- Literature search based on CNS effects, brain cancer, human and animal studies
- Physical and chemical properties:
  - Fat solubility - Log (K_{ow})
  - Volatility - Vapor pressure
- What is unique to Spring House?
- Meetings with technical staff and stakeholders
- Examination of Exposure Database (EEMS)

Preliminary List of Chemicals

- **Isothioazolones**
- **Ethers (Diphenyl ether, Bis chloromethyl ether (BCME), chloromethyl methyl ether (CMME))**
- **Nitrosoamines**
- **Acrylates**
- **Other groups to be evaluated for future analysis**

Tiered Assessment

- Analyze mortality data by and department and function over time
  - Can focus on specific units
  - Account for changing environment/work practices
- Analyze by selected cumulative chemical exposures.
  - Individual chemicals and chemical categories, e.g. acrylates.
  - Account for changing environment/work practices

Report

- Mid-2010
- Mortality study
- Recommendations
  - Cancer incidence?
  - Other exposure assessments?
  - Continued follow-up?
  - Expanded population?

External Science Advisory Board

- Nurtan Esmen, Ph.D.

  Industrial Hygiene, University of Illinois, Chicago
- Harvey Checkoway, Ph.D.

  Epidemiology, University of Washington, Seattle
- Philip Harber, MD, MPH

  Occupational Medicine, University of California, Los Angeles