EPA's National Air Toxics Assessment (NATA)

Introductory material for Windham *et al*. presentation to Region 9

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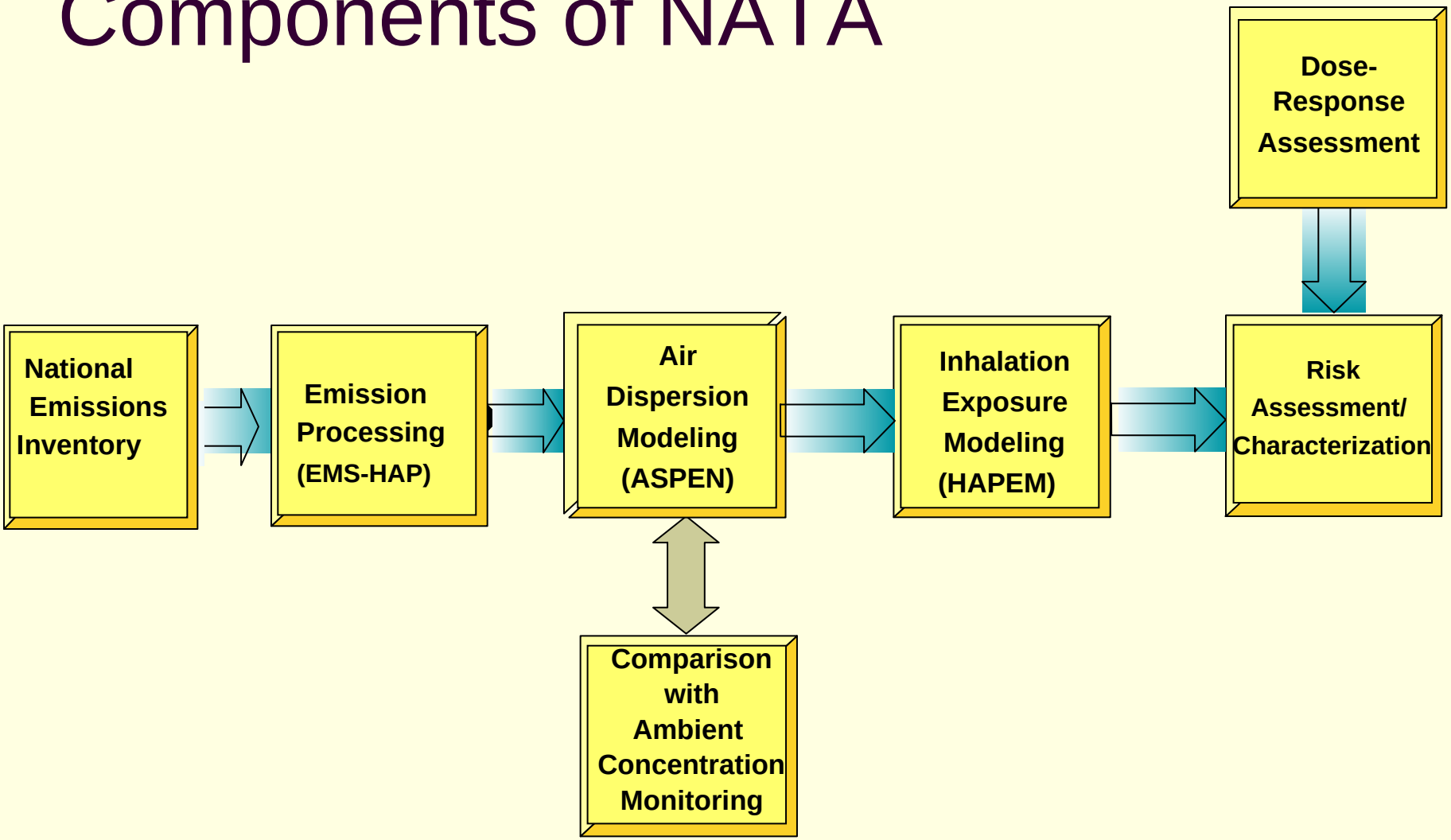
(overview slides courtesy of Ted Palma, OAQPS)

What is NATA?

Characterization of air toxics across the nation:

- Nationwide assessment, census tract resolution
- 177 hazardous air pollutants (HAPs) plus diesel PM (1996 NATA estimated 32 HAPs plus diesel PM)
- Emissions from:
  - major stationary sources (e.g. power plant),
  - smaller stationary sources (e.g. dry cleaners and gas stations),
  - onroad mobile sources (e.g. cars), and
  - nonroad mobile sources (e.g. locomotives, lawn and garden equipment)
- Modeled ambient concentrations and estimated inhalation exposures from outdoor sources
- Cancer and noncancer risk estimates for the 133 HAPs with health data based on chronic exposures

Components of NATA



History of National Air Toxics Assessments

- Cumulative Exposure Project (CEP)
  - 1990 data
  - Released in 1998
  - No peer review
- 1996 NATA
  - 1996 data
  - Released in May 2002
  - Internal and Science Advisory Board peer reviews
- 1999 NATA
  - 1999 data
  - Internal reviews
  - Scheduled for release in early 2006

1999 National-Scale Assessment
Risk Characterization - Significant Pollutants

- **Cancer**
  - **National drivers** [1]
    - Benzene
  - **Regional drivers** [2]
    - Arsenic compounds
    - Benzidine
    - 1,3-Butadiene
    - Cadmium compounds
    - Carbon Tetrachloride
    - Chromium 6
    - Coke oven
    - Ethylene oxide
    - Hydrazine
    - Naphthalene
    - Perchloroethylene
    - POM

[1] At least 25 million people exposed to risk > 10 in 1 million
[2] At least 1 million people exposed to risk > 10 in 1 million OR At least 10,000 people exposed to risk > 100 in 1 million

- **Non-Cancer**
  - **National drivers**[3]
    - Acrolein
  - **Regional drivers**[4]
    - Antimony
    - Arsenic Compounds
    - 1,3-Butadiene
    - Cadmium compounds
    - Chlorine
    - Chromium 6
    - Diesel PM
    - Formaldehyde
    - Hexamethylene 1-6-diisocyanate
    - Hydrazine
    - Hydrochloric acid
    - Maleic anhydride
    - Manganese compounds
    - Nickel compounds
    - 2,4-Toluene Diisocyanate
    - Triethylamine

[3] At least 25 million people exposed to a hazard quotient (HQ) > 1.0
[4] At least 10,000 people exposed to HQ >1
Blue indicates new drivers since 1996

HAPs Potentially Relevant to Autism, Used by Windham *et al*.

Metals

- Arsenic
- Cadmium
- Chromium
- Lead
- Manganese
- Nickel

Aromatic Solvents

- Benzene
- Ethyl Benzene
- Styrene
- Toluene
- Xylene

Chlorinated Solvents

- Methylene chloride
- Perchloroethylene
- Trichloroethylene
- Vinyl chloride

Other HAPs

- Hydrazine
- PAHs (7)
- Diesel PM