

Update on HEI's new initiative on particulate matter toxicity

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Current HEI Strategic Plan

Develop a program to systematically address which components and characteristics of the ambient PM mixture (and which sources) are the major contributors to the health effects of PM.

RATIONALE

- Huge variability in characteristics of PM, dependent on factors including:
 - sources
 - climate
 - season
 - time of day
- How to determine which PM characteristics are responsible for toxicity?

PM Planning Committee – members of HEI's Research Committee with experience in epidemiologic and toxicologic studies

Set up epidemiologic - and parallel controlled exposure/toxicologic - study in multiple cities across the US that differ in their PM characteristics.

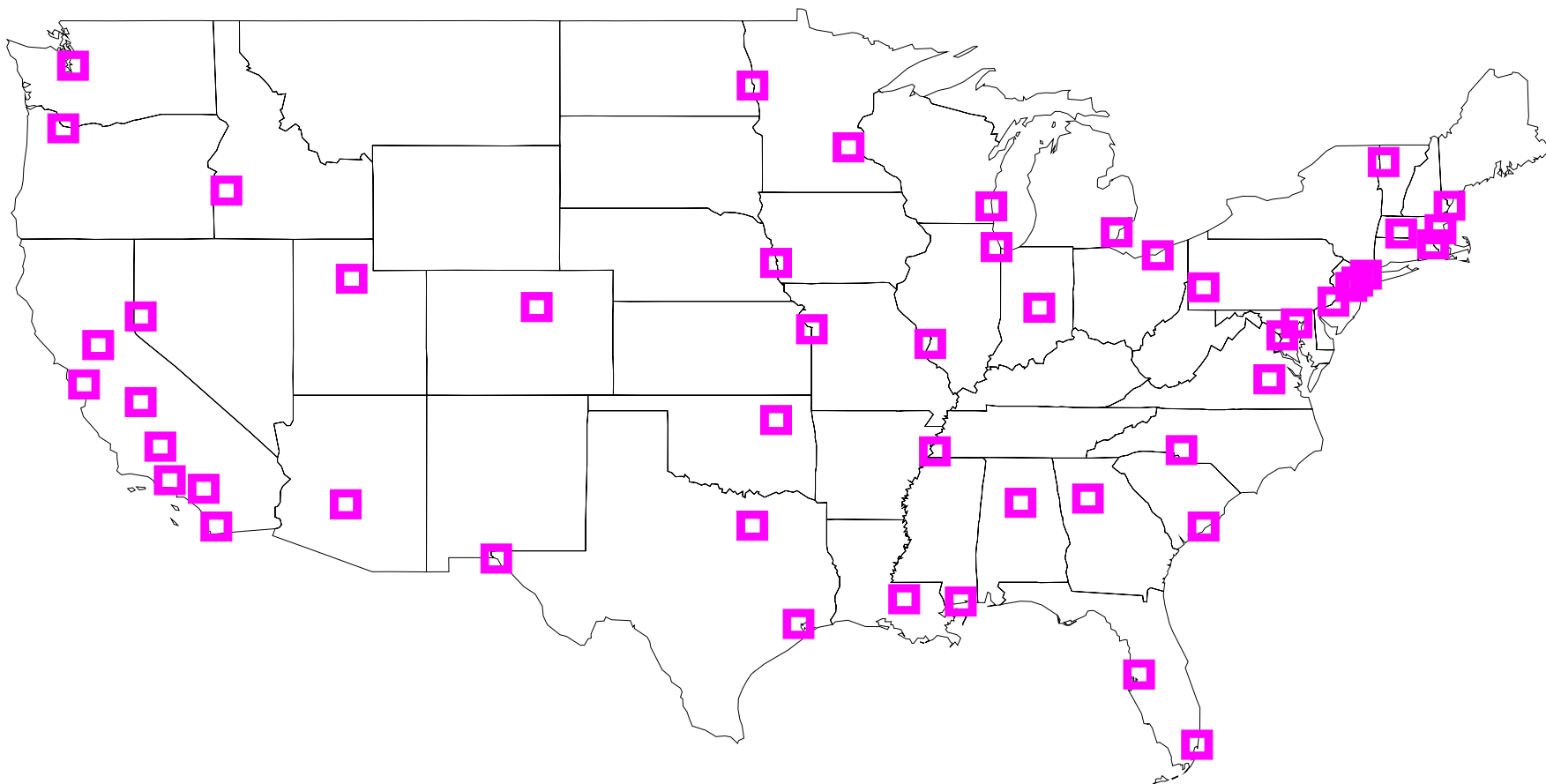
HEI PM Planning Committee's 3-step approach

1. Create a database of air pollutant information.
2. Hold workshop to discuss study design issues for multi-site epi and parallel tox studies.
3. Issue RFA/Q to fund multi-site epi and tox studies.

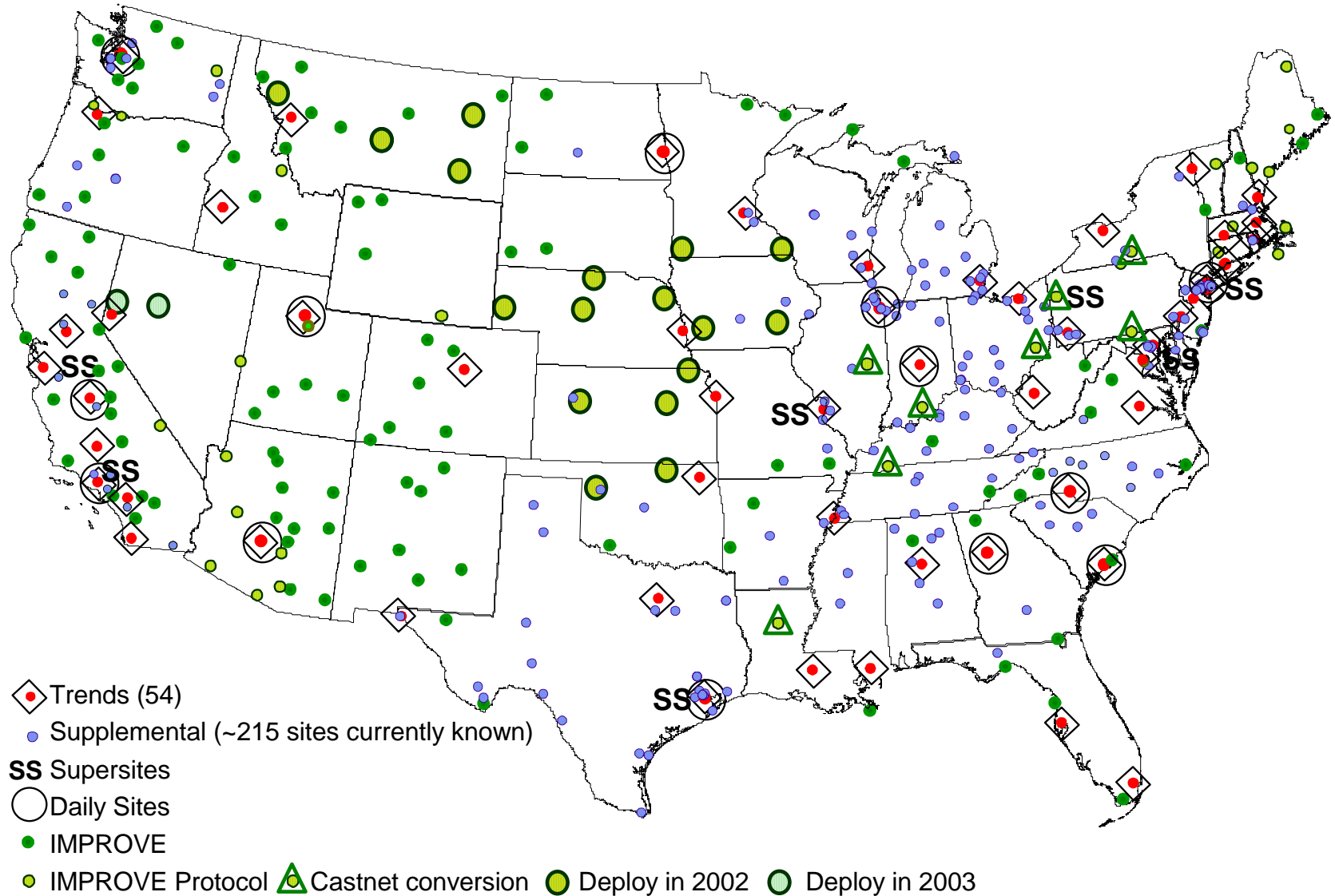
Step 1. Create a database of air pollutant information

- Use EPA's PM_{2.5} Chemical Speciation Trends Network (STN) as basis
 - 54 urban sites
 - Collects data on PM_{2.5} mass and components, including sulfate, nitrate, trace elements, and elemental and organic carbon.
- Add data on gases, other pollutants + other relevant data (sources, climate etc) at or near each site

Location of Speciation Trends Monitors in EPA's Speciation Network



Current/Planned Urban & Rural PM_{2.5} Speciation Networks



Step 1. Creating an air pollutant database (continued)

RFP issued December 2003

- Received 16 highly competitive proposals; reviewed in two-stage process.
- Funded Christian Seigneur, Atmospheric & Environmental Engineering, Palo Alto, CA.
- Work started April 2004, with database to be available mid-2005.
- Will select subset of sites with diverse characteristics and develop further information.

Step 2. Workshop to discuss multi-site study design issues

For multi-site epi and parallel tox studies:

What kinds of study designs?

Which endpoints to measure?

How to link pollutants with sources?

What health information is available in databases at or near different sites?

Workshop to take place Summer 2004.

Step 3. Issue RFA/Q to fund multi-site epi and tox studies

- Based on conclusions from Summer workshop, write RFA/Q, issue in late 2004/early 2005.