

US EPA ARCHIVE DOCUMENT

***Promoting Collaboration in the
PM Research Program***

EPA PM Centers Kick-off Meeting
November 30, 2005
RTP, NC

ORD Research Provides the Foundation for EPA's Decision-Making

PM research has significant regulatory benefits & impacts.

- ▶ PM NAAQS - protect public health
 - OMB – account for ~80% of all benefits attributable to regulation
 - OMB - \$120 to \$183 billion annual savings for years - 1992 to 2002 (emergency room visits / hospitalizations, lost workdays, premature deaths)

- ORD science reduces uncertainty and strengthens confidence in the NAAQS
- ORD science provides the models and tools needed to implement the NAAQS

Clean Air -- EPA Goal 1



“Protect and improve the air so it is healthy to breathe and risks to human health and the environment are reduced.”



National Research Endeavor

Research Priorities for Airborne Particulate Matter:

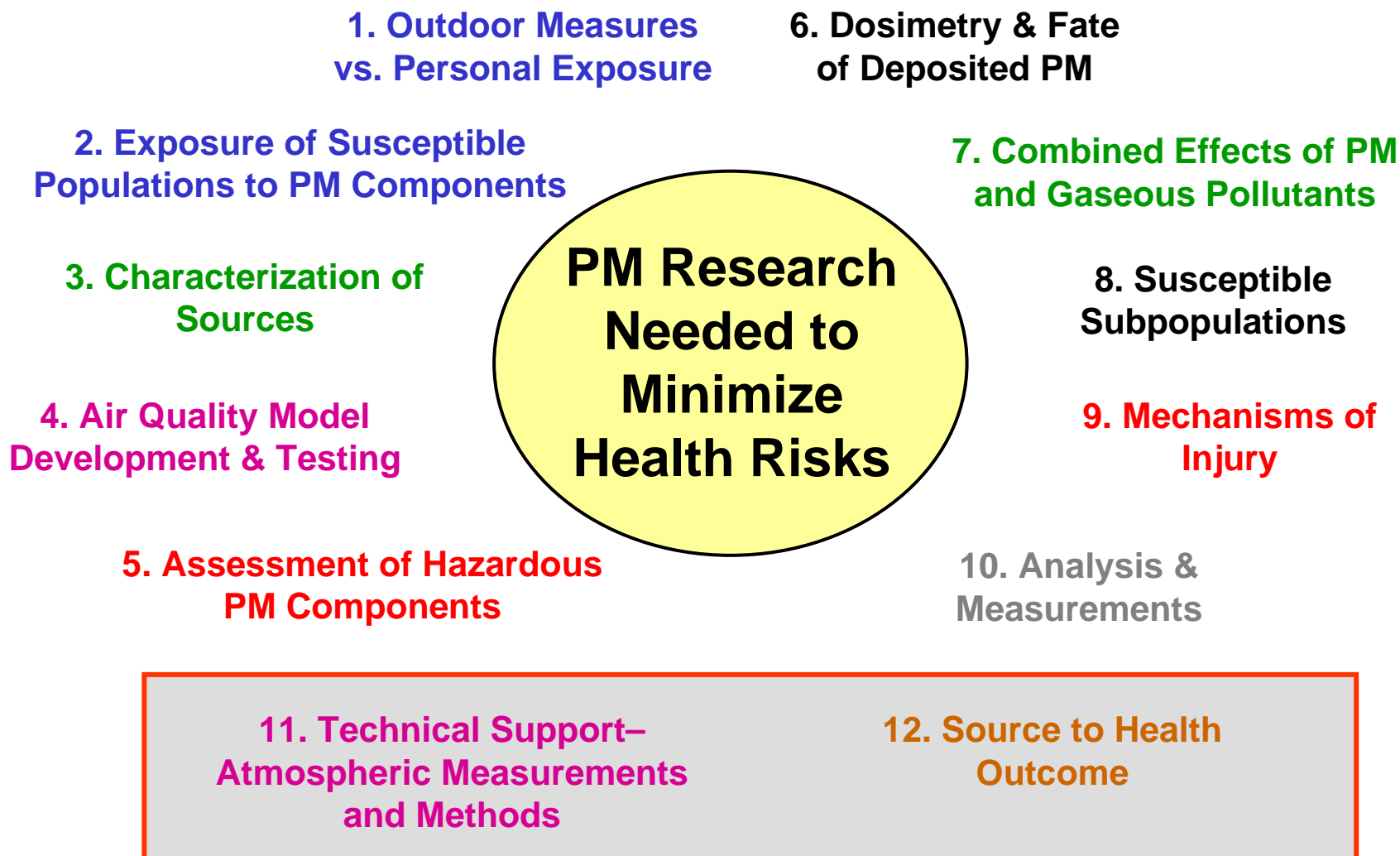
NRC subcommittee convened from late 1997 – 2004 to assess the state-of-knowledge, recommend a multi-year research portfolio, and follow progress of PM research.



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

NRC Research Priorities for PM

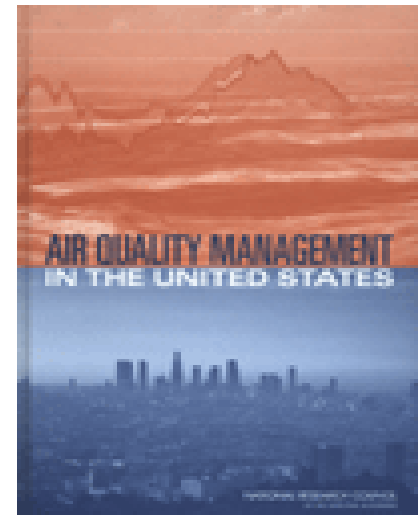


Related Recommendations to Enhance Air Quality Management

NRC Report Addresses CAAAC AQM Recommendations

1. Strengthen Scientific and Technical Capacity
2. Expand National and Multistate Control Strategies
3. Transform the SIP Process
4. Develop Integrated Program for Criteria and Hazardous Air Pollutants
5. Enhance Protection of Ecosystems and Public Welfare

2004



EPA PM Research Program



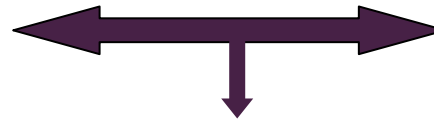
Epidemiology



Molecular

Clinical and Animal
Toxicology Studies

Intramural Program



EPA STAR Program
(PM Centers)

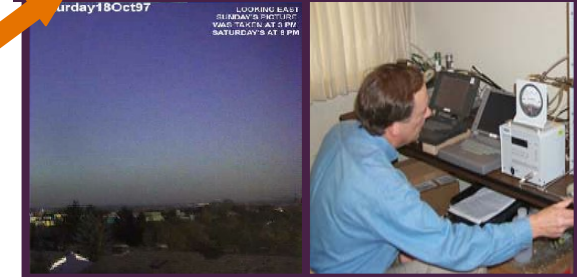
EPA Partners:

- *Other Federal Agencies*
- *Health Effects Institute*
- *National Research Council*
- *Academia*
- *Industry laboratories*

Emission Source
Characterization



Exposure, Atmospheric
Measurement and
Models



Supersites and EPA
Monitoring Network



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

History of the PM Centers

1998: EPA established five university-based PM Research Centers

2004: EPA re-competed the five PM Centers for advanced research



How is the Role of PM Centers Viewed in EPA's Research Program

- Bring 'into' ORD, renown and unique expertise that compliments that in house
- Bring added flexibility to ORD to meet changing Program challenges / issues
- Bring in extramural scientists with unique perspectives but common goals for research & public health
- Develop partnerships in ORD research efforts – {Program > \sum parts}



GOALS OF THIS MEETING

Focus on Integration / Interaction

- Share information about programs and projects such that EPA and PM Center researchers can:
 - Become familiar with all planned research
 - Find areas of complimentary interest
 - Identify interactions that would strengthen each Center and the PM Program as a whole
 - Develop a common understanding among Center program staff of how their research activities fit in the context of EPA's overall PM Program.



GOALS OF THE MEETING

Focus on Integration / Interaction

- Develop a climate that encourages the Centers and EPA to:
 - Communicate throughout the year
 - Coordinate to enhance comparability of results
 - Facilitate atmospheric science / engineering / exposure / health disciplines to communicate and share perspectives
 - Explore collaborations and coordinate to the extent possible to maximize the impact of findings



What is Meant by Integration / Interaction?

- Consider the range of opportunities:
 - Sharing information
 - Seeking / lending expertise to one another
 - Enhancing comparability of results through sharing data, protocols, samples, equipment, etc
 - Designing workshops or symposia
 - Designing new projects collaboratively
- Need to meet administrative requirements
 - Grant rules restrict some interactions with EPA
 - Case-by-case review



EPA's PM Research Program

- Guided by a multi-year plan (MYP) – currently under re-development
- Scope – being broadened beyond PM
- LTGs – limited to two overarching themes
- Role of PM Centers – critical to the overall Program (independent and novel perspectives; broad expertise)



Focus on Long Term Goals

Long-term Goal 1

- Progress toward reducing uncertainty in standard setting and air quality management decisions due to advances in understanding in the air pollution sciences.
 - Inform regulatory decision-making (e.g., NAAQS)
 - Support implementation of regulations with tools, models, and information (OAR, regions, states etc.)



Currently focused on PM and ozone but eventually will support Air Toxics rules



Focus on Long Term Goals

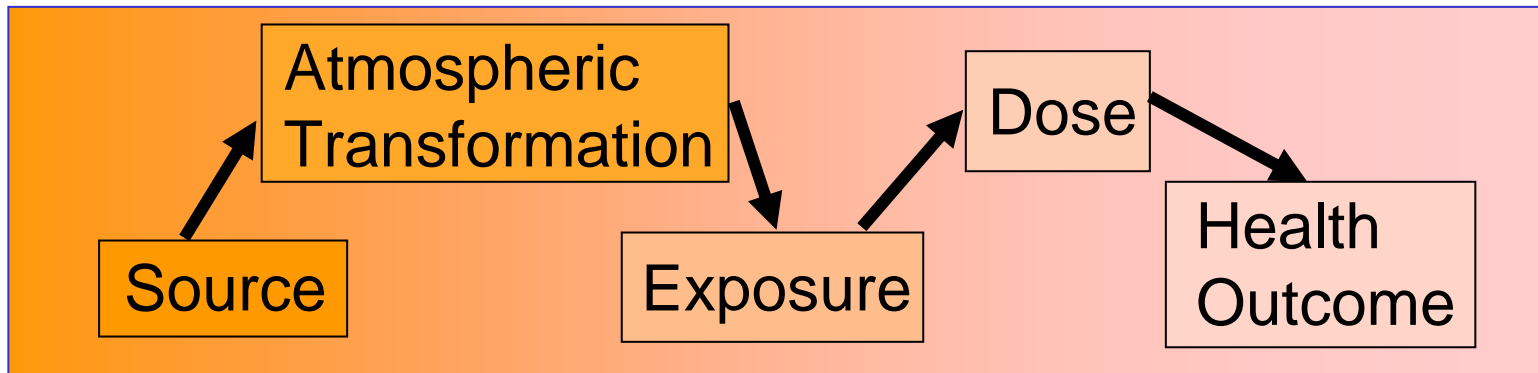
Long-term Goal 2

- Progress in assessing source to health linkages and reducing uncertainties that obscure these linkages.
 - Integrate across science and Program objectives
 - Apply multi-disciplined approaches
 - Use various source profiles of constitutive contaminants to assess those most hazardous
 - Leverage with federal and other organizations
 - Develop advanced and novel approaches to assess source – exposure – health linkages
 - Demonstrate effectiveness of the science and its dependent policy decisions



Integrated Sources to Health Outcomes

Source to Health Outcome approach recognizes health outcomes are linked to sources via interconnected biological, chemical, and physical behaviors



- Greater degree of integration across disciplines
- Improved understanding of entire problem
- Efficient & effective regulation / control strategies



OMB Performance Assessment Rating Tool (PART)

- Evaluates program effectiveness in four areas: Purpose / Design, Strategic Planning, Program Management, and Program Results
- Programs receive numerical score and rating (Effective, Moderately Effective, Adequate, Results Not Demonstrated, Ineffective)
- Outcome-oriented research
- R&D specific questions in PART reflect :
Relevance - Quality - Performance



Some Parting Thoughts on Working Together to Achieve Outcomes

- One goal of the STAR program is to develop scientific knowledge and tools that are useful to program offices and decision makers
- Demonstrate that we have achieved results is critical for survival of the program
- Quantify progress toward 'outcome' ...
- Communicate information = key to success



What You (as Ctr. Folks) Can Do

- Keep NCER informed about:
 - Research results – ‘hot’ findings
 - Release of publications
 - Special issue journals
 - Workshops and meetings
 - Press coverage of results
 - Communication with people interested in using your results or decision makers



What We Can Do

- Identify EPA scientists and program offices interested in your work
- Facilitate communication of your results
 - Workshops
 - NCER web site
 - Share your success stories with users of scientific information
- Identify scientific results and tools that may be helpful for decision makers



Today's Agenda

- Presentations from Centers
- Overview of EPA's PM Research
- PM Science/Policy Futures
- Breakout Sessions
 - Susceptible populations
 - Panel and Controlled Exposure Studies
 - Application of "OMICS" Technology to Tox Studies
 - Mechanisms/Oxidative Stress
 - Chronic Effects
 - Source and Source-Oriented Sampling
 - Source Apportionment
- Report from Breakout



Tomorrow's Agenda

- National Monitoring Strategy
- Air Quality Data Base for Health Effects Studies
- Breakout Sessions
- Report From Breakouts
- Directions to Collaborative Groups
- Small Group Discussions on Collaboration
- Meeting Highlights and Next Steps

