

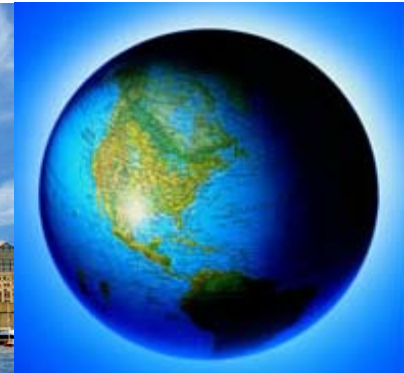
US EPA ARCHIVE DOCUMENT



CLEAN AIR RESEARCH PROGRAM

BUILDING A SCIENTIFIC FOUNDATION FOR SOUND ENVIRONMENTAL DECISIONS

www.epa.gov/ord/npd



Clean Air Research Centers

Understanding Air Quality Health Effects in a Mutipollutant Environment

Dan Costa, ScD, DABT

**National Program Director
Office of Research & Development**

costa.dan@epa.gov

919-541-2532

Old Boston



New Boston



Much has happened since 1970 when EPA was formed and the Clean Air Act Amendments were passed.





Lisa Jackson
EPA Administrator

“The year 2010 marks the EPA’s 40th anniversary. It is a moment of celebration but also a time when we face some of the most complex and far-reaching environmental challenges in the history of the EPA, our nation and our planet.”

Our Challenge: *“21st century environmental problems require 21st century solutions; we cannot effectively address such challenges with 20th century approaches”*



Paul Anastas
Office of Research
and Development
Assistant
Administrator



History - Particulate Matter Centers

- 1997 – NAAQS for fine particles & 1998 EPA directive to address uncertainties in the evidence of PM health effects
- 1999 – EPA awarded five university-based PM research centers for five years
- 2002 – Science Advisory Board review
- 2004 – National Research Council recommendations
- 2005 – EPA awarded five new PM research centers
- 2009 – Science Advisory Board recommends continued focus on PM and other single pollutant research with new efforts to address mixtures of air pollutants
- 2011 – Announce four new Clean Air Research Centers



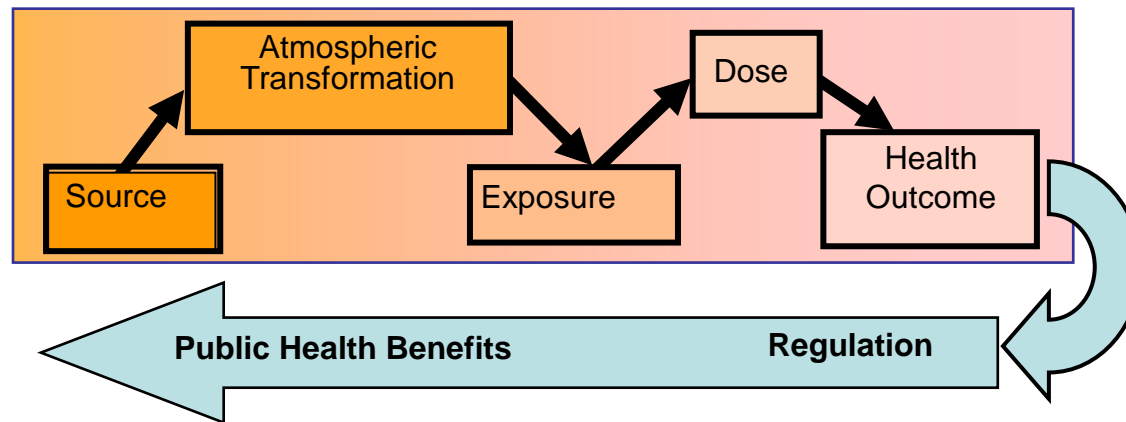
PM Center Select Findings

- PM affects both the lung and heart and is a significant contributor to cardiovascular effects
- There may be other effects on the body (e.g. brain)
- Particle size, number, composition and distribution are important and we are getting better at measuring PM
- We are getting better at understanding the different toxicity of different sources of PM (e.g. traffic)
- Disease and death can vary across communities and across seasons
- Reducing fine particulate matter pollution has increased life expectancy by 5 months or more

Clean Air Research Centers

Key objectives:

- Research health effects of exposure to particulate matter (PM), ozone, and other air pollutants, both singularly and in multipollutant atmospheres.
- Take an **integrated approach to their study designs.**



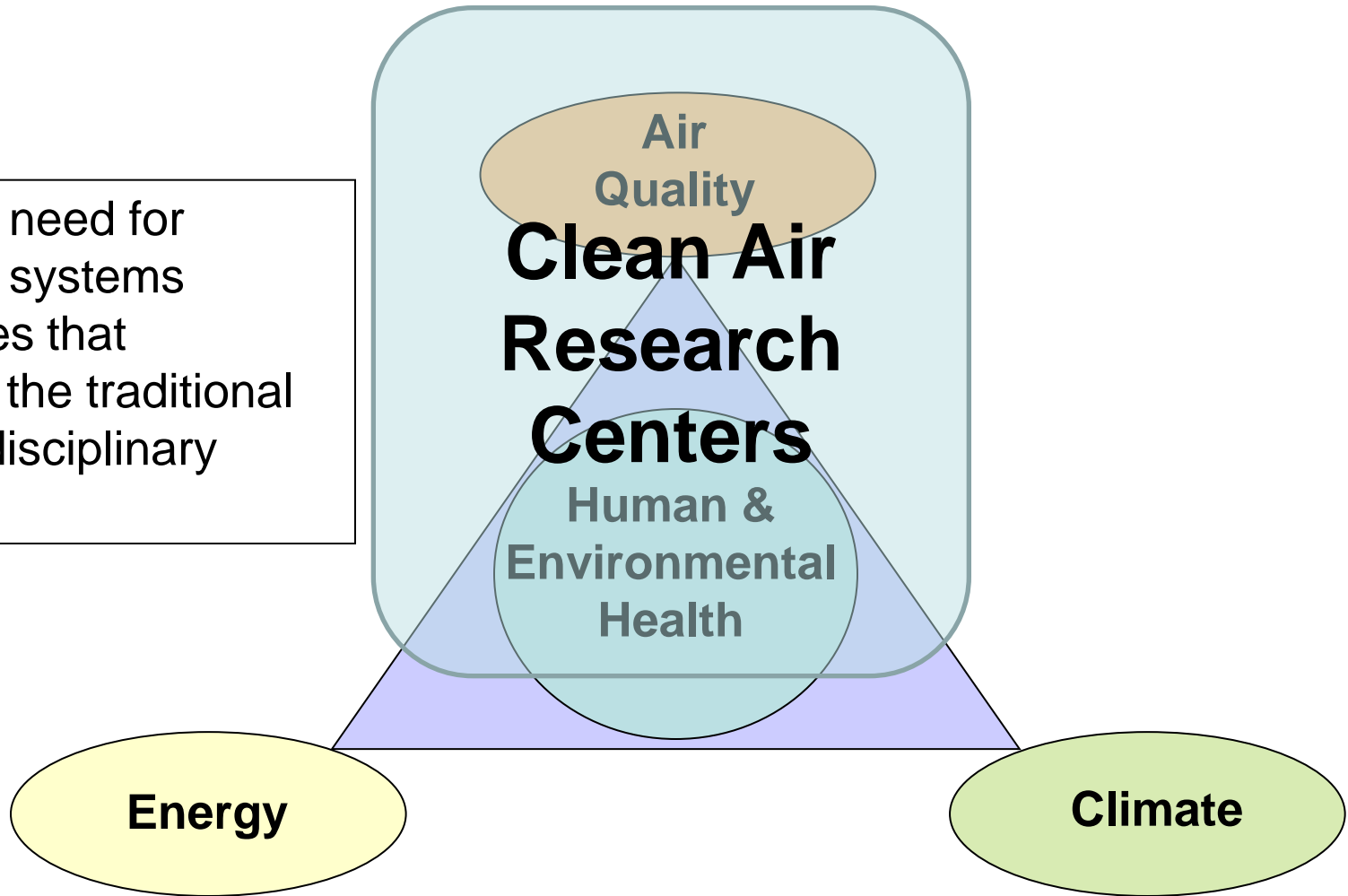
- Consider social factors (e.g. where people live) when studying health effects to air pollution sources (e.g. traffic)



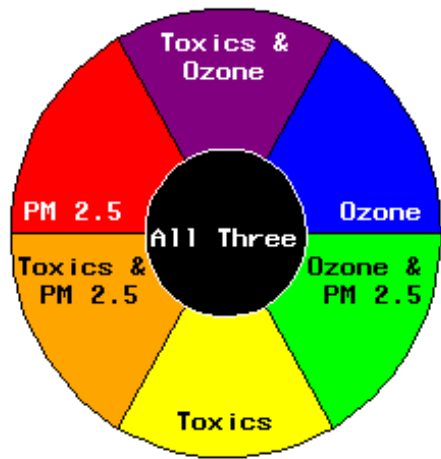
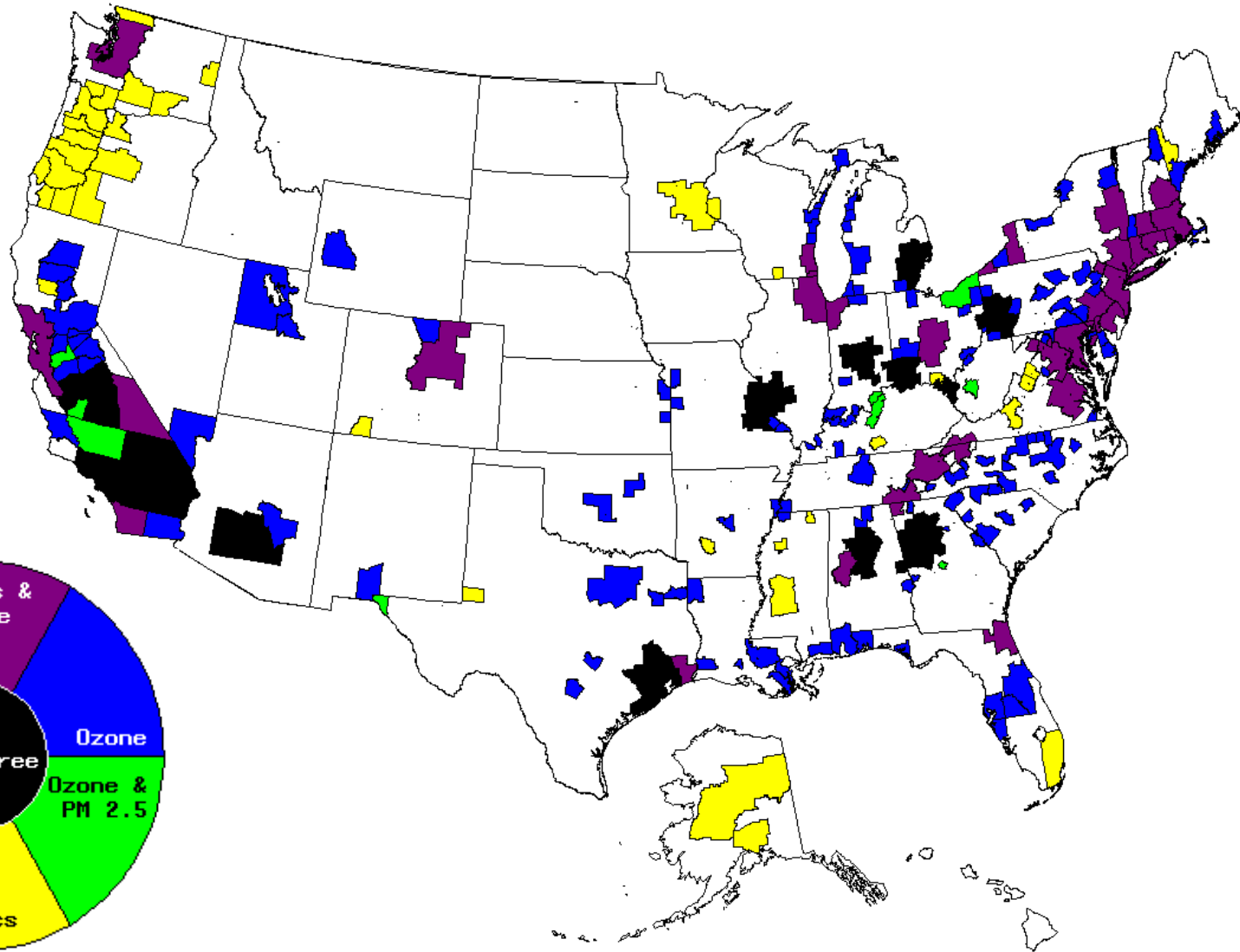
What lies ahead?

Air Climate and Energy

There is a need for integrated systems approaches that transcend the traditional scientific disciplinary paradigm.



Multipollutant approaches take into account that humans and ecosystems are exposed to many air pollutants at the same time



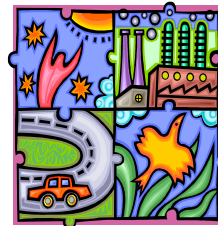
“One Atmosphere” is Now

- Climate Change & Air Quality are inherently **multipollutant**.
- The interactions of air quality-climate with undoubtedly have health and environmental consequences.
- We need to be aware and prepare now.

Embedded critical issues:



environmental justice



Communities



Global change

susceptible populations



Goal and Objectives for Today's Meeting

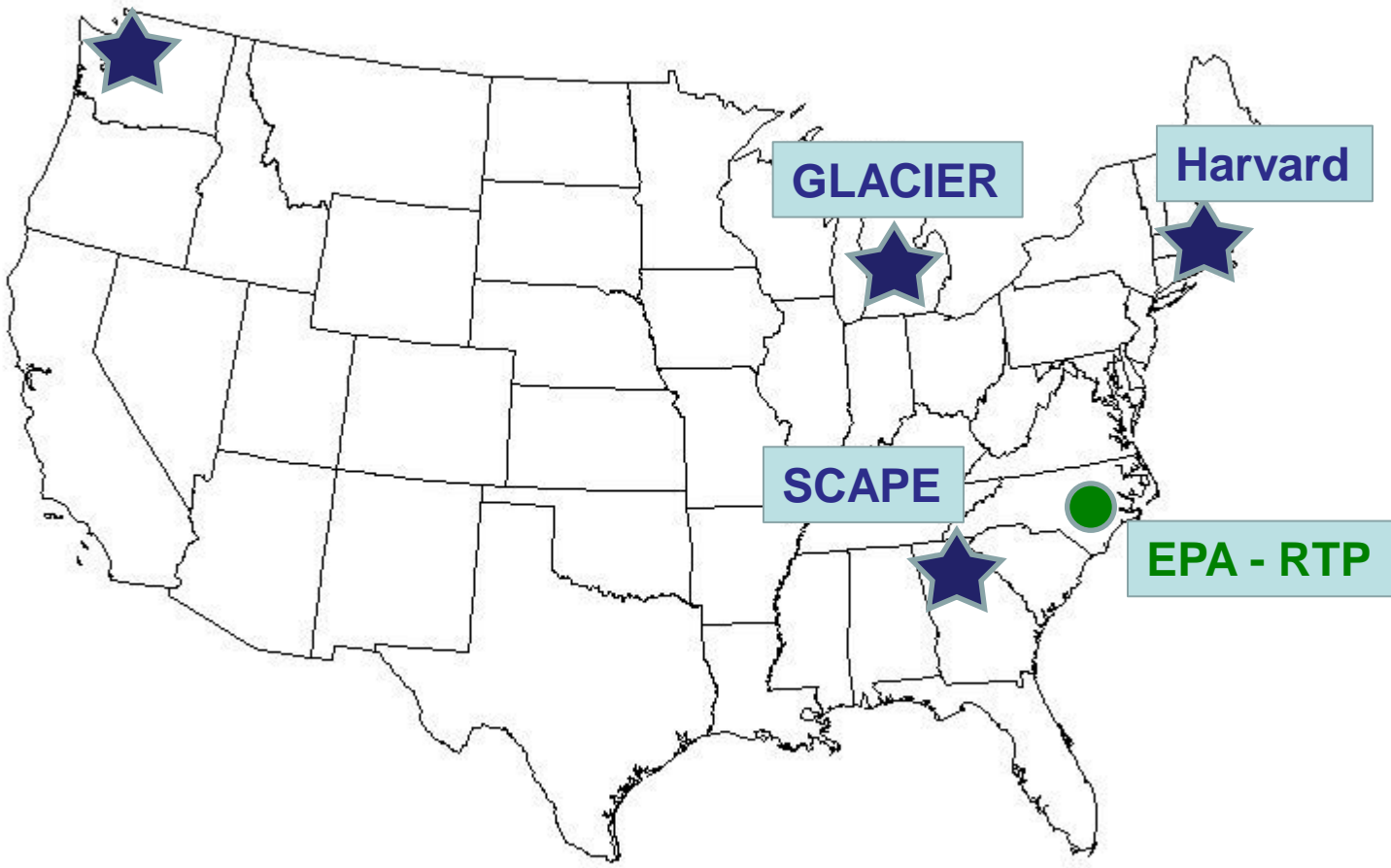
Collaborate on Air Quality and Health Research in a Multipollutant Context

Objectives:

- Share information on the CLARC research
- Introduce EPA research capabilities
- Discuss challenges of joint interest
- Explore the evolution of multipollutant research
- Identify potential projects for collaboration

CLARCs

University of Washington



CLARC Directors



Great Lakes Air Center for Integrative Environmental Research (GLACIER)

- Jack Harkema, DVM, PhD, Michigan State University



Harvard Clean Air Research Center

- Petros Koutrakis, PhD, Harvard School of Public Health



University of Washington Center for Clean Air Research

- Sverre Vedal, MD, MSc, University of Washington



Southeastern Center for Air Pollution and Epidemiology (SCAPE)

- Paige Tolbert, PhD, Emory University
- Ted Russell, PhD, Georgia Institute of Technology

CLEAN AIR RESEARCH PROGRAM

BUILDING A SCIENTIFIC FOUNDATION FOR SOUND ENVIRONMENTAL DECISIONS

www.epa.gov/ord/npd



Clean Air Research Centers WELCOME