

# Air Quality Modeling: Connecting to Health Effects

- Modeling Tools
- Future Applications
- Modeling Needs

# Modeling Tools

- Linking Air Quality to Health Effects (spatio-temporal “interpolation” and exposure modeling)
- Linking Emissions to Health Effects (air quality and exposure modeling, source apportionment)

# Future Applications

- Risk Assessment: NAAQS, Residual risk
- Implementation: Tools for making choices at the local level, beyond SIP requirements
- Accountability: Health tracking
- Urban-Scale Models to Support Epidemiologic Studies
- Multi-Objective Network Design

# Air Quality Modeling Needs

- Multi-pollutant Models
- Multi-year Simulations
- Fine Spatial Resolution (near roadway)
- Subgrid-scale Variability
- Data Assimilation (concentrations)
- Characterization of Uncertainties

# Emissions Modeling Needs

- Characterization of Uncertainties
- Estimation of Emissions from the Most Uncertain Sectors with Inverse Modeling Techniques
- Better Temporal and Spatial Resolution