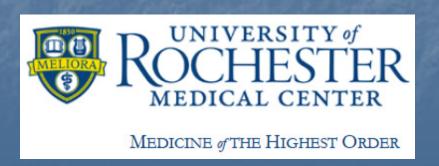
## How Low Should We Go? New Research on Low-Level Air Pollution: Panel Discussion

Mark J. Utell, MD

Health Effects Institute Annual Conference
May 1-3, 2016 Denver



## Potential Air Pollution & Cardiorespiratory Mechanisms AMBIENT AIR POLLUTION Pulmonary Inflammation **Pulmonary** Reflexes Systemic Inflammation Autonomic **Nervous System Acute Phase** Leukocyte Response & Oxidant Endothelial Automaticity & Platelet Coagulation Stress Dysfunction Conduction Activation **Factors** Repolarization Atherosclerosis Progression & Plaque Instability Heart rate Rhythm Plaque Rupture **Thrombosis** RESPIRATORY MYOCARDIAL INFARCTION, STROKE

& OTHER CV EVENTS

**ILLNESS** 

## Levels < the NAAQS: Mechanistic Considerations

- Question: If air pollution at low levels causes adverse effects, any reason to assume different mechanisms?
  - → Probably not, but
- Many exposures/diseases will trigger similar responses thus many confounders for low level exposures
- Role of biomarkers will be non-specific
- Prediction: Will find statistical relationship
- <u>Caution</u>: Attribution of morbidity and death