

**AIR POLLUTION AND HEALTH - RECENT ADVANCES AND UNANSWERED QUESTIONS****R. Maynard<sup>1</sup>, J. Schwartz<sup>2</sup>**<sup>1</sup>*Department of Health, UK*<sup>2</sup>*Department of Environmental Health, Harvard Medical School, Boston, USA*

Concentrations of many air pollutants are now lower in Western cities than for many years. This reflects well upon both Governments and the research workers who have provided the evidence to show that health is benefited by policies designed to drive levels downwards. Research inevitably poses new questions: some particularly challenging ones have appeared in the past five years. Three areas seem unusually important to me. Firstly, which are the active components of the ambient aerosol? Small particles may be playing a key role and, if they are, this may lead to a reconsideration of our chosen metric for standards and control strategies. Secondly, who is at risk? Recent work has focused on people with cardiovascular disease and simulating hypotheses to explain this effect have been advanced. The very young may also be at risk and we need more data in this obviously important area. Thirdly, can we begin to devise a broad and consistent explanation for the effects of several pollutants? Particles may act by virtue of their capacity to induce the formation of free radicals in the tissues of the body, but ozone may also act in this way, as might nitrogen dioxide. A bold, unifying hypothesis is needed and may soon be available. There are, of course, many more questions to ask: some will be answered during the next five years, others will not. The impact on health of ambient exposure to mutagens and to toxic organic compounds is poorly understood and tightening our grasp on these pollutants will be a serious challenge. Defining the effects of long-term exposure to pollutants, especially the gases ozone and nitrogen dioxide will also be a problem. The advances made, the research conducted, the new questions and their answers all depend on the continuing concern expressed by the public, by organisations such as IUAPPA and by Governments in this problem.