

Chapter 1 : Day Cultural progress? – Expat Richie

*"To capture the minds and wallets of your average consumer, who isn't that fashion forward, the clothes have to be presented in a neutral way and not have a 'borrowed from the boys' or.*

At the same time, gaps in the available evidence raised questions concerning the scientific basis for the standards that needed to be addressed to strengthen the base of evidence for future PM NAAQS setting and implementation. Beginning in , with guidance from this committee, the U. Environmental Protection Agency EPA , other agencies, and the scientific community initiated an expanded national effort to address high-priority research needs for PM by targeting research for key gaps in the scientific evidence. This effort was expected to require over a decade-long investment. The pace and scope of PM research have accelerated, and new research findings are available for policymakers engaged in reviewing the scientific basis for the PM NAAQS. There is increasing multidisciplinary exchange involving epidemiologists, toxicologists, exposure assessors, and atmospheric scientists on how best to integrate the work of the various disciplines. A new national monitoring system has been installed that is beginning to provide data on ambient concentrations of PM<sub>2.5</sub>. As shown in previous chapters, the research effort is now starting to yield important dividends while raising new questions for further research. The experience to date has also provided lessons in the effective management of research. However, important issues need to be addressed to ensure sustained Page Share Cite Suggested Citation: Research Priorities for Airborne Particulate Matter: The National Academies Press. A shift towards these objectives will require enhanced, multidisciplinary research, and although progress has been made in improving the management of PM research and the gathering and synthesis of information, significant science management challenges remain to be addressed before the goals of the research plan recommended by the committee can be reached. In this chapter, the committee provides guidance on scientific management issues that it expects to be relevant for successfully addressing key priorities for PM research in the future. These issues need to be addressed if the questions identified for continuing research in the previous chapters are to be answered successfully and in a timely fashion. Specifically, this chapter addresses Enhancing and sustaining research and its management at EPA and across the broader research enterprise. Tools needed for enhancing the tracking and synthesis of the science going forward. Such management is often more difficult in large public and private institutions where conflicting and changing priorities, institutional fragmentation, and administrative restrictions limit effective program implementation. Yet, sustained, creative management is essential for producing timely results that will provide answers to the key questions posed. In its previous reports, the committee, recognized the need for this type of management and called for sustained efforts at EPA and other organizations. Management of the PM research program requires the following elements: Broadening the scope of and setting priorities for the full range Page Share Cite Suggested Citation: Developing and implementing a plan to deploy resources—funding, intramural and extramural researchers, and multiple scientific disciplines—to address the highest priority issues. Providing for aggregation and integrative analysis of results and data. Tracking and iteratively reviewing progress. Communicating issues, approaches, and progress internally and externally. Ensuring that PM research is integrated into a broader perspective that encompasses other pollutants. Although many agencies and organizations have been and must continue to be involved in planning and implementing PM research, EPA has appropriately applied the largest single body of resources and has played the lead role in coordinating the national research effort. Over the past 6 years, in response to funding from Congress and the reports of this committee, EPA took a number of steps toward implementing a multiyear, multidisciplinary PM research program. At the same time, continuing challenges remain for EPA and for the broader scientific community in accomplishing the kind of sustained, creative management that will be necessary to complete the PM research program outlined in the first two reports. The remainder of this chapter pursues the following objectives: Briefly review progress to date at EPA. Identify key challenges going forward for EPA. Consider the need for broader, multiagency implementation. Propose the development of a new scientific committee to provide continuing monitoring and advice. Environmental Protection Agency NRC , identified a series of challenges

for improving the quality of EPA science for example, the frequency of changes in goals, priorities, practices, structure, and funding and called for broad improvements to those efforts, including enhanced ability to identify the most important science issues, the need for effective leadership at all levels, flexibility and accountability for agency research managers, and improved partnerships with the full range of other research entities. Against this background, EPA applied and redeployed resources and made some progress in implementing the PM research program. Specific suggestions to accomplish that are discussed in the next section.

**Enhancing EPA Research Management** Although progress has been made in implementing the PM research program at EPA, the challenges of implementing an important air quality and public health program and placing it in the context of other pollutants over the long term call for an even greater level of emphasis on science management at EPA.

**Program Management and Leadership:** However, in the past 2 years, the position of national program director, while continuing, has been filled by several individuals on an acting basis for relatively short terms. Looking forward, the committee sees the continued critical importance of sustained central management and leadership and urges the identification of longer-term appointments to this key position. The functions to be filled by the research will require the sustained appointment of individuals who can, at a minimum, provide sensitive leadership, maintain communication and coordination among agency personnel and investigators in a progressive research agenda, serve as a focal point for communication across the government and outside the government, and redirect the research agenda as needed. Sustained leadership from talented managers alone will not be sufficient to ensure that a complex research program, involving people from many disciplines working in multiple laboratories in government, academic, and private institutions, is managed in an efficient and effective manner. The program manager and leader and the participating scientists and support personnel need modern program and project management tools that facilitate management. Modern computer-based systems exist that can link goals, financial resources, human resources, and measures of progress together for tracking progress and making mid-course adjustments. Such an approach is of critical importance to the successful management of multiple projects oriented to achieving interrelated goals. EPA does not appear to have such a computer-based management system. When requests were made by the committee to EPA for information on project goals, allocation of resources, past expenditures, or measures of progress manuscripts published or presentations given, the agency was always responsive, but the response each time appeared to be generated in an ad hoc fashion. The value of such a system does not relate to responding to external requests but to facilitating the work of program researchers as they work toward common goals in a loosely affiliated network and team.

**Administrative Flexibility to Deploy Resources:** Any successful research program must have the ability to pursue a mix of research approaches, with investigator-initiated research to capture the fullest creativity of the scientific community balanced with more structured research strategies in key areas where systematic approaches across diverse laboratories and disciplines will be necessary. However, while EPA has moved forward on the investigator-initiated aspects of such a program, it has not balanced those efforts with the kind of fully interactive approach that is likely to be needed to accomplish the reduction of key uncertainties, especially those involving the identification of the toxicity of the different components of the PM mixture topic 5. The imbalance is in part due to the current preference of EPA to use primarily grant and more cooperative agreement mechanisms in managing their research efforts, mechanisms that limit its ability to manage and coordinate the research more actively and to make mid-course corrections as the program evolves. Although these mechanisms are preferred for a reason—to ensure that federal agencies are not unduly directing, and perhaps stifling, scientific investigation—the complex nature of the tasks ahead for PM researchers suggests that the judicious use of more active research management strategies could be appropriate to complement the investigator-initiated approaches. EPA might do that directly or through other mechanisms. As discussed in previous chapters, emissions inventory development and air quality model testing and development are two particularly critical issues for the implementation of current and possible future NAAQS for PM. The committee has identified the need for faster progress in these areas, given the upcoming implementation deadlines for the PM<sub>2.5</sub>. EPA should provide more guidance, leadership, and coordination among the groups carrying out air quality modeling and emissions inventory work, particularly those conducting emissions

characterization. Some of the needed emission characterizations will be carried out by the states, industry, and other stakeholders. Although EPA personnel indicated to the committee that they have ranked sources by their contribution to primary PM emissions, it is unclear whether they are using such information to set priorities for source testing. EPA will also need to ensure that the information developed through this work is quickly made available to state and local agencies as they prepare their SIPs. The attainment-demonstration guidance also emphasizes the complementary application of both source and receptor models to develop a conceptual model that can help guide the selection of appropriate controls. Despite that flexibility, the committee is concerned that the implementation of emission controls to attain the NAAQS may occur without models that have been properly evaluated and have uncertain validity. The committee previously commented that emissions tracking, air quality modeling, and ambient monitoring activities should be viewed as a set of integrated processes, each component supporting the others. The need for enhanced science management becomes especially important when one considers the extraordinary scientific challenge posed by the assessment of the hazardous components of the PM mixture. The committee urges EPA to assume strong scientific leadership in relation to this topic. Sustained and intensive management by EPA should be substantially beyond its efforts to date, and it should have an effective mechanism for the active involvement of the full range of public and private sector research organizations. Integrated planning and augmented management structure are needed within the Agency and across the scientific community. Although this undertaking will be costly and time consuming, the large size of the public health benefits and the potential private sector control costs will make the cost of such a research initiative small by comparison. Implementing such overarching management will benefit science and public policy substantially. But at the same time it must be implemented in a way that both brings together the scientific community in a coordinated fashion, even while ensuring that the individual innovation and creativity that different scientists can bring to the task can still contribute to the results. Maintaining this balance will be essential to the successful conduct of this important undertaking. To implement such a program, a specific plan is needed that approaches the matrix of particle characteristics by health outcomes in an organized and tiered fashion, screening across the matrix with common approaches so that priorities can then be set for a second stage of more focused investigation. Beyond a plan, mechanisms are needed for the integrated implementation of research in a public and private partnership. An umbrella organization of the involved institutions might be needed to ensure coordination as well as efficiency in assessing hazardous PM components. Outside scientists should be involved from the outset, most likely through a steering or coordinating committee for this topic that draws on both intramural scientists, including health researchers and exposure and monitoring experts, and extramural scientists from the full range of appropriate disciplines and institutions. Developing Future Human Resources: Accomplishing this objective requires not only talented leadership at the top but also development and renewal of trained investigators prepared to work in the required multidisciplinary arenas to meet the key scientific challenges identified in Chapter 5. Training a new generation of scientists is an essential part of any future sustained effort to explore health effects and atmospheric research in a PM or broader air pollution program. Training will need to be supported and fostered at the doctoral and post-doctoral level and within the research community of the federal government, particularly EPA. EPA had a training fellowship program that has been helpful, but budgetary support for that program has not been stable. Beyond that program, the need for such training and the mechanisms to implement it were described in valuable detail in the NRC report on strengthening science at EPA NRC Data Aggregation and Analysis: One key role for EPA, as a central manager of this program, is to ensure the timely collection, importation into accessible central databases, and analysis of the results and data produced by the PM research program. However, the development of such integrated approaches has been more difficult in other cases, for example, in the Supersites Program. Both the committee in its first reports and others for example, a workshop on monitoring airborne PM [Albritton and Greenbaum ] recommended that the Supersites Program be designed from the start as an integrated program that could meet the needs of multiple monitoring technology, modeling, exposure assessment, and health. Although the program has produced useful data on a site-by-site basis, and efforts have been made to compile the data in a central database, the program was not designed and implemented in an integrated and systematic

manner with analysis plans built in from the beginning. This substantially limits the future usefulness of its results. To date, little funding has been made available for research efforts to analyze the wealth of data across all the sites and cooperating programs. Beyond these specific challenges, tracking and synthesis of the scientific literature need to be substantially enhanced as the results of this PM program continue to appear see Improved Tools for Science Tracking and Synthesis below. Support has come from a wide range of government agencies and other research funding organizations. Planning and management of research across government agencies and other organizations present a number of continuing challenges, including 1 specific agency missions and differing needs and priorities for research; 2 variability in planning processes and management Page Share Cite Suggested Citation: Those and other challenges affect the coordination of PM research across funding agencies, and a lack of sufficient coordination could undermine the effectiveness of research. Page Share Cite Suggested Citation: These efforts have been valuable but have not affected decisions on how the individual agencies allocate and spend their funds. The committee concludes that existing interagency research coordination efforts to date have helped promote greater awareness of PM-related research needs among federal and state agencies, academic scientists, the private sector, segments of the international research community, and nongovernment stakeholder organizations. However, effective coordination among these parties has not yet been achieved. The committee recommends that the following additional steps be taken to improve interagency research coordination:

**Chapter 2 : David Lidington: the Chequers plan is the pragmatic way forward**

*The Commission on a Way Forward was proposed by the Council of Bishops and approved by the General Conference to do a complete examination and possible revision of every paragraph of the Book of Discipline concerning human sexuality and explore options that help to maintain and strengthen the.*

Sorokin said, "The ancient Chinese, Babylonian, Hindu, Greek, Roman, and most of the medieval thinkers supporting theories of rhythmical, cyclical or trendless movements of social processes were much nearer to reality than the present proponents of the linear view". Therefore, Chinese proponents of modernization have looked to western models. According to Thompson, the late Qing dynasty reformer, Kang Youwei, believed he had found a model for reform and "modernisation" in the Ancient Chinese Classics. The last two centuries were familiar with the myth of progress. Our own century has adopted the myth of modernity. The one myth has replaced the other. Men ceased to believe in progress; but only to pin their faith to more tangible realities, whose sole original significance had been that they were the instruments of progress. This exaltation of the present The present is superior to the past, by definition, only in a mythology of progress. Thus one retains the corollary while rejecting the principle. There is only one way of retaining a position of whose instability one is conscious. One must simply refrain from thinking. World War I , World War II , and the rise of totalitarianism demonstrated that progress was not automatic and that technological improvement did not necessarily guarantee democracy and moral advancement. British historian Arnold J. Toynbee " felt that Christianity would help modern civilization overcome its challenges. Besides rejecting the lessons of the past, they Americanized the idea of progress by democratizing and vulgarizing it to include the welfare of the common man as a form of republicanism. As Romantics deeply concerned with the past, collecting source materials and founding historical societies, the Founding Fathers were animated by clear principles. They saw man in control of his destiny, saw virtue as a distinguishing characteristic of a republic, and were concerned with happiness, progress, and prosperity. Bury wrote in It cannot be proved that the unknown destination towards which man is advancing is desirable. The movement may be Progress, or it may be in an undesirable direction and therefore not Progress The Progress of humanity belongs to the same order of ideas as Providence or personal immortality. It is true or it is false, and like them it cannot be proved either true or false. Belief in it is an act of faith. In the postmodernist thought steadily gaining ground from the s, the grandiose claims of the modernizers are steadily eroded, and the very concept of social progress is again questioned and scrutinized. In the new vision, radical modernizers like Joseph Stalin and Mao Zedong appear as totalitarian despots, whose vision of social progress is held to be totally deformed. Postmodernists question the validity of 19th century and 20th century notions of progress"both on the capitalist and the Marxist side of the spectrum. They argue that both capitalism and Marxism over-emphasize technological achievements and material prosperity while ignoring the value of inner happiness and peace of mind. Postmodernism posits that both dystopia and utopia are one and the same, overarching grand narratives with impossible conclusions. Progress trap Some 20th-century authors refer to the "Myth of Progress" to refer to the idea that the human condition will inevitably improve. In , English physician Montague David Eder wrote: Philosophers, men of science and politicians have accepted the idea of the inevitability of progress. The strongest critics of the idea of progress complain that it remains a dominant idea in the 21st century, and shows no sign of diminished influence. As one fierce critic, British historian John Gray b. The interaction of quickening scientific advance with unchanging human needs is a fate that we may perhaps temper, but cannot overcome Those who hold to the possibility of progress need not fear. The illusion that through science humans can remake the world is an integral part of the modern condition. Renewing the eschatological hopes of the past, progress is an illusion with a future. Recently the idea of progress has been generalized to psychology, being related with the concept of a goal, that is, progress is understood as "what counts as a means of advancing towards the end result of a given defined goal. Bury said that thought in ancient Greece was dominated by the theory of world-cycles or the doctrine of eternal return, and was steeped in a belief parallel to the Judaic " fall of man ," but rather from a preceding " Golden Age " of innocence and simplicity. Time was generally regarded as the enemy of

humanity which depreciates the value of the world. He credits the Epicureans with having had a potential for leading to the foundation of a theory of progress through their materialistic acceptance of the atomism of Democritus as the explanation for a world without an intervening deity. Xenophanes said "The gods did not reveal to men all things in the beginning, but men through their own search find in the course of time that which is better. The Renaissance of the 15th, 16th and 17th Centuries changed the mindset in Europe towards an empirical view, based on a pantheistic interpretation of Plato. This induced a revolution in curiosity about nature in general and scientific advance, which opened the gates for technical and economic advance. Furthermore, the individual potential was seen as a never-ending quest for being God-like, paving the way for a view of Man based on unlimited perfection and progress. Age of Enlightenment In the Enlightenment , French historian and philosopher Voltaire " was a major proponent. His subsequent notion of the historical idea of progress saw science and reason as the driving forces behind societal advancement. Immanuel Kant " argued that progress is neither automatic nor continuous and does not measure knowledge or wealth, but is a painful and largely inadvertent passage from barbarism through civilization toward enlightened culture and the abolition of war. Kant called for education, with the education of humankind seen as a slow process whereby world history propels mankind toward peace through war, international commerce, and enlightened self-interest. The difficulties and dangers of life provided the necessary stimuli for human development, while the uniquely human ability to evaluate led to ambition and the conscious striving for excellence. Man found his happiness only in effort. He said, "Had population and food increased in the same ratio, it is probable that man might never have emerged from the savage state". Most scholars concluded this growth of scientific knowledge and methods led to the growth of industry and the transformation of warlike societies into an industrial and pacific one. They agreed as well that there had been a systematic decline of coercion in government, and an increasing role of liberty and of rule by consent. There was more emphasis on impersonal social and historical forces; progress was increasingly seen as the result of an inner logic of society. He describes the mid 19th century condition in The Communist Manifesto as follows: The bourgeoisie cannot exist without constantly revolutionizing the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form, was, on the contrary, the first condition of existence for all earlier industrial classes. Constant revolutionizing of production, uninterrupted disturbance of all social conditions, everlasting uncertainty, and agitation distinguish the bourgeois epoch from all earlier ones. All fixed, fast frozen relations, with their train of ancient and venerable prejudices and opinions, are swept away, all new-formed ones become antiquated before they can ossify. All that is solid melts into air, all which is holy is profaned, and man is at last compelled to face with sober senses his real condition of life and his relations with his kind. No social order is ever destroyed before all the productive forces for which it is sufficient have been developed, and new superior relations of production never replace older ones before the material conditions for their existence have matured within the framework of the old society. Marxism further states that capitalism, in its quest for higher profits and new markets, will inevitably sow the seeds of its own destruction. Marxists believe that, in the future, capitalism will be replaced by socialism and eventually communism. The unreasonable man persists in trying to adapt the world to himself. Therefore, all progress depends on the unreasonable man. Thus, by the beginning of the 20th century, two opposing schools of thought "Marxism and liberalism" believed in the possibility and the desirability of continual change and improvement. Marxists strongly opposed capitalism and the liberals strongly supported it, but the one concept they could both agree on was modernism , a trend of thought which affirms the power of human beings to make, improve and reshape their society, with the aid of scientific knowledge, technology and practical experimentation.

### Chapter 3 : In the way | Define In the way at [www.nxgvision.com](http://www.nxgvision.com)

*the way forward phrase If you say that a particular type of action or development is the way forward, you approve of it because it is likely to lead to success.*

#### Chapter 4 : Progress - Wikipedia

*Following the announcement of its 'Way Forward' restructuring plan in June, the Ralph Lauren executive team reported progress on the set of guidelines and action items laid out for fiscal "We are pleased with the process," said Jane Nielsen, CFO of Ralph Lauren, who previously held the same position at Coach.*

#### Chapter 5 : Progress Synonyms, Progress Antonyms | [www.nxgvision.com](http://www.nxgvision.com)

*The management of any multidisciplinary, multiyear research program is challenging and requires strategic planning, leadership, commitment of a wide range of expertise, and resources.*

#### Chapter 6 : Moving Forward Quotes - BrainyQuote

*THE fear of immigration is poisoning Western politics. Donald Trump owes his job to it. Brexit would not be happening without it. Strident nationalists wield power in Italy, Hungary, Poland and.*

#### Chapter 7 : Way | Define Way at [www.nxgvision.com](http://www.nxgvision.com)

*Fashion Fashion Forward and Uncomfortable. O.K., it's fine. We're still making progress. But there's a long way to go, as evidenced by just about everythingâ€”but especially the trends.*

#### Chapter 8 : Progress | Definition of Progress by Merriam-Webster

*Moving Forward quotes Living quotes Potential quotes Moving Forward quotes Progress quotes Growth quotes Forget the past for it cannot be changed, look to the future for it is what will be, but live in the present for it is your current self.*

#### Chapter 9 : Move forward Synonyms, Move forward Antonyms | [www.nxgvision.com](http://www.nxgvision.com)

*Day Cultural progress? The Chinese have this weird thing for queuing ; basically what the rest of the world would do - - line up in an orderly fashion and wait for your turn - - the Chinese tend to just push their way forward, ignore everyone around them, and force their way to the front.*