



Marion C. Blakey  
President and Chief Executive Officer

May 13, 2009

Dr. John P. Holdren  
Director, Office of Science and Technology Policy  
Executive Office of the President  
725 17<sup>th</sup> Street, N.W.  
Washington, DC 20502

Re: Scientific Integrity Recommendations

Dear Dr. Holdren:

The Aerospace Industries Association (AIA) appreciates the opportunity to provide comments to the White House Office of Science and Technology Policy (OSTP) in developing recommendations for Presidential action to ensure scientific integrity throughout the executive branch. The principles laid out in the President's March 9, 2009 Memorandum for the Heads of Executive Departments and Agencies (the Executive Memorandum) regarding scientific integrity can be used to establish a strong and lasting foundation for improving the use of science in public policy.

AIA represents the nation's leading manufacturers and suppliers of civil, military, and business aircraft, helicopters, unmanned aerial vehicles, space systems, aircraft engines, missiles, materiel, and related components, equipment, services, and information technology. The Alliance for Environmental Responsibility and Openness (AERO) is a sub-committee consisting of eight AIA members. The aim of AERO is to better understand, prepare for, and address emerging environmental issues related to chemicals used by the aerospace industry. One of AERO's primary goals is to assist federal and state agencies in obtaining and effectively applying state-of-the-art, unbiased scientific research.

AIA supports all six of the President's principles, but focuses its comments on principles (a), (b) and (e):

*(a) The selection and retention of candidates for science and technology positions in the executive branch should be based on the candidate's knowledge, credentials, experience, and integrity.*

The integrity of a candidate for science and technology positions in the executive branch should be determined by the candidate's adherence to applicable ethical and legal standards, not by the candidate's employment history. There are examples from every sector – academia, government, and the private sector – of scientists who have misrepresented or misstated results, or otherwise violated such standards.

(b) *Each agency should have appropriate rules and procedures to ensure the integrity of the scientific process within the agency.*

(e) *Each agency should have in place procedures to identify and address instances in which the scientific process or the integrity of scientific and technological information may be compromised.*

The procedures developed in support of these principles should pertain to all scientific and technical information regardless of its source so that data from industry, academia, and government are evaluated in the same manner using the same criteria. Too often agencies presume that industry-supported science is biased and therefore afford it less weight or dismiss it altogether. Yet industry-supported science has been indispensable to furthering scientific understanding in multiple areas. Good science is good science regardless of its funding source.

OSTP should develop procedures and criteria that require all available, relevant data to be evaluated in transparent ways that advance understanding and inform policy decisions to be made by agencies. The procedures should ensure that agencies consider all available, relevant information in a systematic way using defined criteria (such as the Bradford-Hill criteria for assessing causation<sup>1</sup>) that is consistent with the scientific process and allows the public to understand fully how conclusions are reached.

Therefore to advance principles (b) and (e) of the Executive Memorandum and to best use the full range of scientific information that is available, procedures to evaluate the integrity of all available studies should be established, systematically and transparently applied, *and the resulting aggregate information considered in a separate "weight of the evidence" procedure using defined criteria.* The weight of evidence procedure should be similarly transparent and lead to reproducible outcomes for a given set of information by any who use it. Through systematic, consistent implementation of such procedures, agency evaluations that do not rely on all available data can be eliminated.

AERO supports the Environmental Protection Agency's (EPA) improved Integrated Risk Information System (IRIS) process for the development of key toxicological assessments for chemicals of interest to EPA. The IRIS process provides an excellent example of "transparency in the preparation, identification, and use of scientific and technological information in policymaking" as described in the second paragraph of the Executive Memorandum. The IRIS process allows for increased stakeholder participation throughout the process, which enhances transparency, facilitates consideration of all relevant data, and helps ensure scientific integrity. This is particularly important because the numerical assessments (reference doses, reference concentrations, and cancer slope factors) EPA develops through the IRIS process influence a wide range of regulatory decisions at other federal and state agencies.

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<sup>1</sup> Hill, AB. The environment and disease: association or causation? Proc. Royal Soc. Med. 1965; 58:295-300, accessible at <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1898525&blobtype=pdf>. The nine criteria are: (1) Strength; (2) Consistency; (3) Specificity; (4) Temporality; (5) Biological gradient (dose-response relationship); (6) Plausibility; (7) Coherence; (8) Experiment; and (9) Analogy.

Although some have claimed that the updated IRIS process has impaired EPA's ability to complete IRIS assessments, we are not aware of any empirical evidence that supports such claims. Indeed, we believe that involving stakeholders in an assessment before EPA has formed an opinion, and throughout the process, should lead to assessments that truly reflect the weight of all relevant data, and therefore are less likely to be controversial.

Many disputes regarding the "integrity" of a scientist or a scientific conclusion are not actually about integrity. Instead, they are disputes about the proper conclusions to be drawn from a complicated body of animal, human and other studies. The procedures and criteria to be developed by OSTP should help to reduce the frequency of such disputes, provided that OSTP holds agencies accountable for the implementation of the procedures and criteria, and the agencies in turn hold their staffs similarly accountable.

Regards,

A handwritten signature in black ink, appearing to read "Marion Blakey", with a long, sweeping underline that extends to the right.

Marion S. Blakey

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