

## SCIENTIFIC INTEGRITY IN PUBLIC POLICY

Our nation faces a wide range of complex challenges requiring the timely and efficient formulation of public policy. Accurate and up-to-date scientific and technical information is critically important for developing many public policies. Policy decisions should be informed by people with a variety of skills and perspectives, including the relevant technical expertise.

The American Chemical Society (ACS) strongly supports the use of insightful, comprehensive scientific and engineering input to the development and evaluation of policy options. ACS also encourages the use of scientific integrity policies that help federal, state, and local governments obtain and integrate scientific assessments into policy development and implementation.

Scientific integrity—including the independence of the scientific process and the rigorous application of science-based knowledge—should be upheld throughout all levels of government. Scientists and engineers should provide comprehensive, transparent, unbiased, and understandable technical analyses. Policymakers should consider scientific analyses and relevant technical information in a comprehensive, transparent, and unbiased manner.

As noted in a recent report of the National Academies of Sciences, Engineering, and Medicine,

*“The relationship between the research enterprise and the larger society, including policy makers and the public, has become deeper and more complex. Research is implicated in more policy areas with higher stakes, so as science is called upon to inform decision making there is more risk of research being invoked in controversies, misrepresented, or shaped to advance a desired political outcome, contributing to poor decision making and loss of public trust.”*

To clarify and strengthen the role of science and the integrity of its use in development of public policy, ACS recommends the following:

### **Federal, State, and Local Governments**

- Government agencies should regularly review and improve their procedures for obtaining and utilizing unbiased scientific and technical input for policy development.
- Government agencies should utilize scientific and technical advisory committees to guide programs. Advisory committees should contain a diversity of technical expertise and opinions, selected from recognized, credible experts in the field from all sectors. Committees should have sufficient diversity to reduce or eliminate conflict of interest concerns for any single member. Employer, professional or political affiliations, and prior policy positions should not preclude anyone from serving on advisory committees. Program leaders are ultimately responsible for weighing the advice of the committee, making decisions, and documenting rationales for decisions made.
- Agencies should clearly and transparently identify what scientific information would be needed to inform their key regulatory issues, and develop frameworks to collect,

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The American Chemical Society (ACS) Board of Directors Committee on Public Affairs and Public Relations adopted this statement on behalf of the Society at the recommendation of the Committees on Environmental Improvement, Science, and Corporation Associates. ACS is a non-profit scientific and educational organization, chartered by Congress, with more than 158,000 chemical scientists and engineers as members. The world's largest scientific society, ACS advances the chemical enterprise, increases public awareness of chemistry, and brings its expertise to state and national matters.

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evaluate, and use that information in a consistent and timely manner, while protecting intellectual property rights, confidential company information and the privacy of personal information.

- Agencies that conduct or fund scientific research should establish and maintain scientific integrity policies that can ensure the objectivity, clarity, and reproducibility of the scientific information, and that provide protection against bias, fabrication, falsification, plagiarism, interference, and censorship.
- Legislative bodies should make use of transparent science, technology and policy analyses performed by qualified professionals in creating effective legislation.
- Legislative committees should seek direct testimony from diverse technical experts on scientific and policy issues,

### **Scientific Processes and Procedures**

- Scientific discourse should be encouraged; such discourse is purposely designed to question what is known and consider various scientific perspectives and interpretations.
- Government agencies should maintain clear conflict of interest policies. Potential conflicts of interest and bias among researchers and other experts involved in policy development and assessment should be handled transparently and fairly.
- Legislative hearings about the science used to inform the crafting of laws and regulatory decisions should be encouraged, because this open dialog will provide the best basis to identify the nature and certainty of knowledge about technical issues.
- Scientists and their institutions should not be burdened unreasonably by extensive or repetitive requests for information and explanation.

### **Data Quality, Use, Review and Preservation**

- Government policy analysts should ensure that scientific input incorporates and references all relevant, peer-reviewed sources.
- Quantitative scientific input with careful uncertainty and sensitivity analyses should be the norm. Conflicting results should be documented and, to the extent possible, quantitatively assessed, evaluated, and reconciled by experts.
- Cross-agency communication is encouraged and should be as transparent as possible.
- Government agencies should have a policy for archiving, protecting, and providing access to scientific data and scientific databases. Science sits on a foundation of observations, tests and analyses that are reproducible, repeated, and verifiable. Conclusions are strengthened by additional observations consistent with the hypothesis, and invalidated by contradictory observations. Preservation of data is critically important for strengthening conclusions, as is transparency about how data are both obtained and used.

### **Scientific Access and Advice**

- Government employed or funded scientists and engineers should be empowered to pursue professional development, present their unclassified research at appropriate technical symposia, and publish in peer-reviewed journals without interference.
- Government scientists should be allowed to discuss their published, peer-reviewed research with the media and the public. When they comment publicly on policy options

informed by their research and general technical knowledge, they should clearly state that they are offering their own opinions and not speaking for the government agency.

- When government agencies must prevent their employees, grantees, and/or advisors from commenting publicly on scientific results or policies, restrictions should be transparent and consistently enforced. Appeal processes should be easily available and timely.