President Barack Obama's recent order striking down Bush-era barriers to stem cell research overshadowed his perhaps larger announcement on science that day: He directed his science advisor to develop a comprehensive plan to protect science from politics in his administration.

That's a worthy enterprise, and it will be a challenge given the scope of the problem. During the Bush years, it was all too common for administration appointees to suppress or reshape scientific findings. But ending manipulation by political appointees is the low-hanging fruit of the bid to restore science to its rightful role in policymaking. It absolutely needs to be picked, but there's much more to harvest.

Indeed, the problem predates Bush, and Obama's solution will need to go beyond rooting out the most egregious habits of his predecessor. Here's how the administration can address the full scope of the problem:

Un-stack the advisory panels. One tool for incorporating the best judgment of the scientific community into policymaking is scientific advisory panels made up of outside experts. Many agencies are required by law to use them. For example, the Environmental Protection Agency has a number of scientific advisory panels and turns to them for counsel when deciding how much of a given toxin in the air or water is unsafe. Unfortunately, panels can be stacked with scientists working for the industries facing regulation. In 2002, for instance, Health and Human Services Secretary Tommy Thompson intervened in the selection process for an advisory panel on lead poisoning issues, booting a noted pediatrician, blocking two other respected public health scientists and installing four industry-tied panelists. Soon after, the panel ignored a call from the public health community for a tighter standard on lead. The policymaking process needs honest and uncompromised scientific advice from expert panels.

Treat private and public research with the same healthy skepticism. Another significant clean science problem is the "most favored science" status accorded to private, mostly industry-sponsored research. Companies seeking approval to market chemicals, pharmaceuticals, pesticides and more rightly bear the burden of demonstrating through research that their products are safe and effective. Sometimes they commission that research; sometimes they conduct it in-house. Both approaches are cause for concern about bias, intentional or otherwise, because the sponsor has a vested interest in the findings. But
the research is submitted, it is largely insulated from scrutiny by public health scientists, including agency scientists, because the underlying data are not required to be shared with the public and may not even be supplied to the agency. By contrast, all of the data underlying research submitted by federally funded researchers is made available to the public. Subject industry research used in the regulatory process to the same standards as federally funded research.

Disclose more. Industry science and scientists are in need of that greatest of all disinfectants — sunshine. When companies submit research findings, they should have to disclose what level of control they exercised over the design of the study. Similarly, when scientific advisory panelists are chosen, they should have to disclose any ties to the industry being regulated. The public should know who has a stake in what.

Protect whistle-blowers. One lesson from past political meddling in science is that it's too easy for White House operatives to intimidate career scientists. What federal employee wouldn't be hard-pressed to refuse a directive from a White House staffer, even if it was an order to subvert scientific findings? One way to provide more protection for scientists and others is to beef up whistleblower protections.

Behave. It's critical that the White House and Obama appointees lead by example, demonstrating by word and deed that scientific research isn't just a rhetorical weapon subject to fudging and corner-cutting. The president made clear his intention to set that example. That's a great start. Now comes the hard part.

Wagner is a professor at the University of Texas School of Law. Steinzor is a professor of the University of Maryland School of Law. Both are member scholars of the Center for Progressive Reform.