A Rook or a Pawn: The White House Science Advisor in an Age of Climate Confusion

Len Aslanian

I. INTRODUCTION

In October 1986, at the height of the American AIDS crisis, the Office of the Surgeon General issued the federal government's first major report on the disease.* In direct and sometimes explicit language, the report detailed the nature, symptoms, and causes of AIDS and called for a nationwide educational campaign that included controversial measures such as early childhood sex education and public promotion of condom use.[1] Eighteen months later, in the largest public health mailing in US history, a condensed version of the report titled *Understanding AIDS* was sent to 107 million American households.[2]

Both versions of the report were personally penned by President Reagan's Surgeon General, the bow-tied and billy goat-bearded pediatric surgeon C. Everett Koop.[3] A controversial figure due to his evangelical Christian background and anti-abor-

1. *See id.*; *The Reports of the Surgeon General: The AIDS Epidemic*, PROFILES IN SCI.: NAT'L LIBRARY OF MED., http://profiles.nlm.nih.gov/ps/retrieve/Narrative/NN/p-nid/62 (last visited June 12, 2011).

2. U.S. DEP'T OF HEALTH & HUMAN SERV., UNDERSTANDING AIDS (1988), *available at* http://profiles.nlm.nih.gov/QQ/B/D/R/L/_/qqbdrl.pdf; *Who is the AAME? C. Everett Koop, MD*, AM. ACAD. OF MED. ETHICS, http://ethicalhealthcare.org/bio-koop.html (last visited June 12, 2011).

3. *Who is the AAME? C. Everett Koop*, *supra* note 2.

tion views,[4] Koop had endured a difficult confirmation process to the Surgeon General post after Congressional liberals led by Henry Waxman labeled him an "arch-conservative" and questioned his credentials for the position.[5] But more than any other figure, it was Koop who during the terrifying early years of the AIDS crisis laid the groundwork that led to the Reagan administration's most extensive efforts against the disease,[6] including a major 1987 speech by Reagan to the American Foundation for AIDS Research,[7] the issuing of a 10-point Executive branch plan to protect HIV-positive federal workers against discrimination, and Reagan's signing of an $870 million appropriations bill for AIDS research and education programs.[8]

Koop's actions as Surgeon General forced the Reagan administration to take notice of the devastating epidemic occurring on its watch. This was despite fierce opposition from many powerful figures in the White House, including Reagan's domestic policy advisor Gary Bauer, who for both political and ideological reasons would have preferred to ignore the AIDS crisis entirely.[9] From outside the White House, Koop also received personal death threats for his forceful actions.[10] Years later, Koop's old foe Henry Waxman had this to say:

> As the nation's doctor, the surgeon general has tremendous credibility and influence. Koop used his to fight AIDS . . . speaking plainly and truthfully when Republicans were discouraged from doing so. It could not have been easy for him. By the end of his tenure, many conservatives despised him. Some Republicans in Congress even boycotted a dinner in his honor because he had done what the rest of the Reagan administration refused to do and

4. *See* Phoebe Connelly, *Safe Words*, THE AM. PROSPECT, May 27, 2010, *available at* http://www.prospect.org/cs/articles?article=safe_words.

5. HENRY WAXMAN & JOSHUA GREEN, THE WAXMAN REPORT: HOW CONGRESS REALLY WORKS 44-45 (2009); Carol Horner, *Koop Leaves Office with Reputation for Integrity*, KNIGHT-RIDDER NEWSPAPERS, July 22, 1989.

6. *See* Connelly, *supra* note 4.

7. President Ronald Reagan, Address to the American Foundation for AIDS Research Awards Dinner (June 1, 1987).

8. *Kaiser Daily HIV/AIDS Report: The 20th Anniversary*, THE HENRY J. KAISER FAMILY FOUND.: KAISERNETWORK.ORG (June 7, 2001), http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=5036.

9. D. Michael Lindsay, Address at the Pew Forum's Faith Angle Conference (May 6, 2008); Connelly, *supra* note 4; *The Reports of the Surgeon General: The AIDS Epidemic*, *supra* note 1.

10. Barbara Stewart, *Death Threats Over Books*, ORLANDO SENTINEL, May 28, 1989, at 6; C. Everett Koop, Presentation to the Joint Session of the Legislature of the State of Texas (Mar. 26, 1987), *available at* http://profiles.nlm.nih.gov/ps/access/QQBCGN.pdf.

> confronted the AIDS problem. That is why Koop is today regarded as the model of what a Surgeon General should be. . . . I was wrong about Koop – and he turned out to make one of the most significant contributions in dealing with AIDS and the public's health.[11]

Koop's heroic role in the AIDS fight illustrates the profound influence a non-Cabinet Executive branch office can have on controversial public debates. In the context of the climate change debate, one such non-Cabinet office with Koop-like political potential is the Science Advisor to the President. The office of the Science Advisor was created during the Eisenhower administration as a direct reaction to the USSR's launch of the Sputnik satellite and consequent fears that the United States was falling behind in the science and technology ("S&T") sector.[12] During the Kennedy administration, the Executive branch Office of Science and Technology Policy ("OSTP") was established in order to support and institutionalize the work of the Science Advisor.[13] The Congressional act establishing OSTP directs the Science Advisor to:

> [A]dvise the President and others within the [White House] on the effects of science and technology on domestic and international affairs[;] . . . to lead interagency efforts to develop and implement sound science and technology policies and budgets, and to work with the private sector, state and local governments, the science and higher education communities, and other nations toward this end.[14]

The Science Advisor's influence over White House policies arguably peaked during the early years of the "space race" and has steadily declined since then.[15] Nevertheless, even in recent years the Science Advisor played an integral role in important White House policies such as the Strategic Defense Initiative,[16] low-

11. WAXMAN & GREEN, *supra* note 5, at 46.

12. *See* BRUCE L.R. SMITH, THE ADVISERS: SCIENTISTS IN THE POLICY PROCESS 164-65 (1992).

13. *Id.*

14. *About OSTP*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA, http://www.whitehouse.gov/administration/eop/ostp/about (last visited June 12, 2011).

15. *See* Roger A. Pielke, Jr. & Roberta Klein, *The Rise and Fall of the Science Advisor to the President of the United States*, 47 MINERVA 7 (2009).

16. With one caveat: Keyworth has claimed that although Reagan consulted him for regular technological assessments of SDI, as Science Advisor he had "little initial input into shaping the larger [SDI] policy." *Id.*

emissions vehicle technologies,[17] and the federal S&T research budget.[18]

Regarding climate change, however, the Science Advisor has so far exerted only a limited influence. This may be due to the fact that the climate issue has only been on the front burner of the nation's political agenda for the past decade or so. But political denial is a more likely culprit: during eight out of the past ten years, the second Bush administration[19] stuck to a consistent pattern of dismissal or suppression of all S&T advice that conflicted with its ideological goals, including that advice related to climate change. The Bush administration's inaction on this massively important issue is of course distressing. But the behavior of the Science Advisor under Bush also starkly illustrates how political office administration depends heavily on the officeholder's ability and willingness to leverage his or her credibility on pressing issues. If one or both qualities are absent, as both apparently were in Bush's Science Advisor, then the office's policy goals are very likely to get steamrolled by larger Executive branch political considerations.

This does not downplay the importance of the Presidential administration's shared interest in the goals of the non-Cabinet office: if no White House support for the office exists outside of its own limited domain, then the office's political role will be reduced to little more than pomp and window-dressing. But for a non-Cabinet office to exert meaningful influence over government policy, a not insignificant amount of both internal support on the part of the White House and personal integrity on the part of the officeholder are helpful, if not required.

As a model of a non-Cabinet office at its lowest ebb of influence and integrity - a near-opposite of Koop's tenure - it is worth exploring the tenure of Bush's Science Advisor in depth.

II.
S&T ADVISEMENT IN THE BUSH ADMINISTRATION

The second Bush administration began with an ominous start, at least from the perspective of the S&T community, when a full

17. *See* Interview by Roger A. Pielke, Jr. with John Gibbons, former U.S. Sci. Advisor, at the Univ. of Colo., Boulder, Colo. (Apr. 28, 2005), *available at* http://sciencepolicy.colorado.edu/scienceadvisors/gibbons_transcript.html.

18. *See id.* at 42-43.

19. Except where otherwise specified, all references in this paper to "Bush" or "Bush administration" relate to the tenure of George W. Bush.

eight months passed after Bush's election victory before he finally nominated a candidate to lead OSTP, the distinguished physicist John Marburger.[20] As one observer put it, the appointment came so late it was made "seemingly as an afterthought."[21] Significantly, this delay prevented the Science Advisor from taking part in the important budgetary and operational decisions that are made during the transition and early days of a Presidential administration, many of which are S&T-related.[22]

Once Marburger was in place, Bush further diminished the position by kicking the physical location of the Science Advisor's office out of the White House and refusing to give Marburger the title of "Assistant to the President." Although both moves may seem merely symbolic, they had a real detrimental effect on the influence of the Science Advisor.

The physical location of a non-Cabinet office has important symbolic and functional effects on the office's political status. As one of the Clinton administration's Science Advisors Neal Lane admitted, much of the Science Advisor's power comes from its perceived importance.[23] Quite plainly, if other Washington power players believe that the Science Advisor has the ear of the President they will accord the office a great deal more respect and attention than would otherwise be the case. To quote one OSTP staffer for the first President Bush's Science Advisor, D. Allan Bromley, "Because of Bromley's proximity to the president, Cabinet-level people came to his meetings."[24] A key to the importance of that "proximity" relates to the perception of external White House observers: those outside the White House are more likely to assume that the Science Advisor and the President are *politically* close if their offices and staff are also *physically* close. The opposite is true if their offices are physically distant from each other. Administratively, Bromley again put it best

20. HENRY KELLY ET AL., FLYING BLIND: THE RISE, FALL, AND POSSIBLE RESURRECTION OF SCIENCE POLICY ADVICE IN THE UNITED STATES 30 (2004). In contrast, Clinton's first Science Advisor was confirmed by the Senate within 8 *days* of his inauguration. CHRIS MOONEY, THE REPUBLICAN WAR ON SCIENCE 240 (2005).

21. Chris Mooney, *The Science Adviser*, SEED MAG., Jan. 3, 2008, at 29, *available at* http://seedmagazine.com/content/article/the_science_adviser/.

22. *See* CARNEGIE COMM'N ON SCI., TECH., AND GOV'T, SCIENCE & TECHNOLOGY AND THE PRESIDENT 10 (1988) [hereinafter CARNEGIE].

23. Interview by Roger A. Pielke, Jr. with Dr. Neal Lane, former U.S. Sci. Advisor, at the Univ. of Colo., Boulder, Colo. (Oct. 5, 2005) [hereinafter Lane Interview], *available at* http://sciencepolicy.colorado.edu/scienceadvisors/lane_transcript.html.

24. Eli Kintisch, *Science Advisers: Bending the President's Ear*, SCI., Jan. 2, 2009, at 28.

when he discussed the situation as it was prior to his arrival, with OSTP situated a few blocks away from the White House: "For all practical purposes - in terms of ease of communication - Pennsylvania Avenue could have been five miles wide."[25]

The Bush administration's refusal to award Marburger an "Assistant to the President" title was also significant. The most important aspect of an "Assistant" title is that it allows for direct access by the individual holding it to the President on a regular basis, rather than requiring them to report to White House aides.[26] Usually only a handful of staffers are accorded this prestigious title: senior political advisors, the Chief of Staff, the National Security Advisor, plus a few others, all at the President's discretion. Some White House observers have argued that an "Assistant" title is necessary to recruit the most outstanding people to the President's senior staff and to allow them to be effective in their high-level tasks once they are in place.[27]

Although not all Science Advisors over the years have been given "Assistant" titles, the first President Bush and President Clinton saw fit to do so.[28] Due to this unbroken 12-year track record of intimate Presidential access, it came as a shock and rebuff to many in the scientific community when Bush refused to accord the same honorary to his Science Advisor. The move effectively demoted the Science Advisor, in prestige and access, to a second-tier position within the White House. It also announced to the S&T community and the American public that the Bush administration did not believe that S&T considerations on policy were worthy of a direct conduit to the key decision-makers in the White House.

This pattern held steady throughout the Bush administration. Thus, for example, Bush subsequently appointed a non-scientist political operative to serve as one of Marburger's Associate Di-

25. *See* D. ALLAN BROMLEY, THE PRESIDENT'S SCIENTISTS: REMINISCENCES OF A WHITE HOUSE SCIENCE ADVISOR 43 (1994).

26. *See* CARNEGIE, *supra* note 22, at 24.

27. *See* CARNEGIE, *supra* note 22, at 24. However, other commentators have argued that the "Assistant" title makes no difference for the purposes of the Science Advisor, by virtue of their opinion that the position is largely irrelevant to begin with. *See* David Goldston, *Not the Best Advice*, NATURE, Sept. 25, 2008, at 453.

28. Erin Heath, *Does the President's Science Adviser Have an Audience?*, 55 BIOSCIENCE 936, 936 (2005), *available at* http://www.aibs.org/washington-watch/washington_watch_2005_11.html.

rectors at OSTP.[29] The Associate Director position holds major influence over the direction of OSTP and therefore in prior years had always been filled by a scientist well-versed in S&T policy issues.[30] John Holdren, who now serves as Obama's Science Advisor, at the time called the appointment "ridiculous" and added that, "I find it inexplicable that we have a nominee who has no qualifications in technology whatsoever. None. Zero. Zip."[31]

Bush also filled only two of the Associate Director positions under Marburger,[32] instead of the four accorded to OSTP by statute,[33] thereby further reducing OSTP's scope and effectiveness. Again quoting Holdren, who noted in response to this decision that, "[e]verybody in Washington knows that the number of Senate-confirmed appointments you control is a direct measure of your capacity to participate."[34]

Other White House insiders during this time claimed that Bush's inner circle stonewalled OSTP and prevented any of its ideas from influencing White House policy. This was especially the case regarding politically contentious subjects such as climate change. Rosina Bierbaum, a holdover from the Clinton administration who served as Acting Director of OSTP for the first 9 months of the Bush administration prior to Marburger's appointment, stated that "the [s]cientists who knew the most about climate change at OSTP were not allowed to participate" in any of the White House discussions regarding the issue.[35]

---

29. SETH SHULMAN, UNDERMINING SCIENCE: SUPPRESSION AND DISTORTION IN THE BUSH ADMINISTRATION 128 (2006); Editorial, *The Science Adviser's Rejoinder*, N.Y. TIMES, Apr. 10, 2004, at A14.

30. *See* sources cited *supra* note 29.

31. Chris Mooney, *Political Science: The Bush Administration Snubs its Science Adviser*, THE AM. PROSPECT, Dec. 3, 2001, at 28, 29, *available at* http://www.prospect.org/cs/articles?article=political_science.

32. DEBORAH D. STINE, THE PRESIDENT'S OFFICE OF SCIENCE AND TECHNOLOGY POLICY (OSTP): ISSUES FOR CONGRESS 8-9 (2009). The two Associate Director positions that Bush eliminated managed the subject areas of Environment, and National Security and International Affairs, respectively. The two that Bush maintained managed the separate subjects of Science and Technology. *Id.* In comparison, the previous two Presidents to Bush, as well as the subsequent one, have all nominated four Associate Directors. BROMLEY, *supra* note 25, at 17 (Bush Sr. had 4); STINE, *supra*, at 11 (Clinton had 4); *OSTP Leadership & Staff*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA, http://www.whitehouse.gov/administration/eop/ostp/about/leadershipstaff (last visited June 12, 2011) (Obama has 4).

33. 42 U.S.C. § 6612 (2006).

34. Mooney, *supra* note 21, at 241. Like the Director of OSTP, Associate Directors also require Senate confirmation. 42 U.S.C. § 6612 (2006).

35. Mooney, *supra* note 31.

However, no incident was more humiliating to the office of the Science Advisor than the "UCS controversy" that occurred at the tail end of Bush's first term. This event and its aftermath also laid out in the starkest terms how fully the Science Advisor had deviated from, to use S&T policy scholar Roger Pielke's terms, its original "Honest Broker" model to that of an "Issue Advocate": in other words, from an objective and independent advisor to a dishonest spokesperson for White House policies.[36]

On February 18, 2004, in reaction to the Bush administration's unrelenting and systematic dismissal of objective S&T advice in determination of its policy positions, the Union of Concerned Scientists (UCS) issued a press release signed by over 60 leading scientists, condemning the administration's actions in unequivocal language.[37] The statement read in part:

> Although scientific input to the government is rarely the only factor in public policy decisions, this input should always be weighed from an objective and impartial perspective to avoid perilous consequences. Indeed, this principle has long been adhered to by presidents and administrations of both parties in forming and implementing policies. *The administration of George W. Bush has, however, disregarded this principle* [emphasis added].[38]

The statement went on to detail numerous instances in which it claimed the Bush administration had failed to heed and even actively sabotaged objective scientific advice.[39] Although few observers expected wholehearted acceptance of UCS's criticism, there was some hope that, in an election year, the White House might take small steps to address some of the incendiary charges leveled against it. In addition, many thought that Marburger, a highly respected scientist whose initial appointment as Science Advisor was met with much acclaim by the scientific community,[40] would not risk damage to his professional reputation by refusing to acknowledge the concerns of his peers.

---

36. *See* ROGER A. PIELKE, JR., THE HONEST BROKER: MAKING SENSE OF SCIENCE IN POLICY AND POLITICS 1-7 (2007).

37. Mooney, *supra* note 21, at 238. The signers of the statement included former Science Advisors Gibbons and Lane. Statement by the Union of Concerned Scientists on Restoring Scientific Integrity to Federal Policy Making (Feb. 18, 2004) [hereinafter UCS] (on file with author).

38. UCS, *supra* note 37.

39. *See* UCS, *supra* note 37.

40. Editorial, *Taking Head: The Next U.S. President Needs to Elevate the Role of the White House Science Advisor*, SCI. AM., May 6, 2008, at 40, 40.

Unfortunately, that hope turned out to be unwarranted. On no occasion did the White House acknowledge the legitimacy of any part of UCS's claims, and in fact Marburger took every opportunity to defend the White House against them. Marburger's initial reaction was to call the UCS statement disappointing, troubling, and biased.[41] Later, in his formal response to the statement, Marburger wrote that the Bush administration applied "the highest scientific standards in decision-making."[42] Marburger called UCS's condemnation of his non-scientist Associate Director a "highly unfortunate" and "totally unjustified personal attack."[43] He then doubled-down and stated that he not only agreed with the decision to appoint an unqualified person to the office but in fact "strongly supported" it after "evaluating the needs of the office and deciding that it required talents and experience that differed from previous incumbents."[44] One can only imagine what those "needs" were, given that they apparently did not include the need for a qualified S&T expert possessing a healthy relationship with the scientific community.

Also worth mentioning is Marburger's attempt to rebut allegations by UCS and other critics of the existence of a political litmus test for prospective S&T advisory figures to the Bush administration.[45] Marburger reacted with the sadly naive statement that, "After all, President Bush sought me out to be his Science Advisor . . . and I am a lifelong Democrat."[46] However, as previously noted, the total lack of Presidential support for its goals can easily reduce a non-Cabinet office to mere figurehead status. Certainly, this appears to have been the situation with Bush and Marburger.

Unfortunately for the reputation of the office of the Science Advisor, Marburger's stalwart defense of the Bush administra-

41. Kristen Philipkoski, *Scientists: Bush Distorts Science*, WIRED, Feb. 18, 2004, *available at* http://www.wired.com/medtech/health/news/2004/02/62339.

42. OFFICE OF SCI. & TECH. POLICY, EXEC. OFFICE OF THE PRESIDENT, STATEMENT OF THE HONORABLE JOHN H. MARBURGER, III ON SCIENTIFIC INTEGRITY IN THE BUSH ADMINISTRATION, at 1 (Apr. 2, 2004), [hereinafter MARGURGER], http://stephenschneider.stanford.edu/Publications/PDF_Papers/ResponsetoCongressonUCSDocumentApril2004.pdf. Curiously, this statement is no longer available on the OSTP website.

43. *Id.* at 3.

44. *Id.*

45. *See* UCS, *supra* note 37.

46. MARBURGER, *supra* note 42.

tion's actions[47] confirmed the fears of many in the scientific community that this once-prestigious position had been demeaned and reduced in status as never before. Prior to Marburger, some part of the objective "Honest Broker" model still inhered in the office of Science Advisor. The position lost a great deal of influence in the years following the "space race," but until the second Bush administration it was still consulted by White House decision-makers on many S&T-related issues and sometimes regarding high-level policy initiatives. By the time Marburger was halfway through his tenure, however, the Science Advisor had hit the true nadir of its institutional life, with its advice no longer even desired by the White House. Rather, in a pathetic perversion of the original mandate of the Science Advisor Bush repeatedly called on Marburger to defend the many highly questionable S&T-related actions of his administration. The Science Advisor was reduced to acting as a politically-motivated Issue Advocate: instead of speaking truth to power, the Science Advisor parroted the falsehoods of the powerful to a public that had learned to trust the office over a half-century of honorable advisory work.

While many federal offices and agencies were allegedly compromised by political considerations during the second Bush Administration, this politicization was particularly egregious with respect to the Science Advisor, whose task is to advise with objectivity and indeed, on some level, to speak on behalf of "Science" itself. One thing is clear: the collapse of the Science Advisor's integrity during these years was a new low from which it may take years for the office to recover and rebuild the public's trust.

47. Marburger went on to make similar such statements in support of the Bush administration throughout his time in office, which quite notably lasted throughout both of Bush's terms. *See, e.g.*, *Talk of the Nation: White House Science Policy* (National Public Radio broadcast Feb. 20, 2004) (Marburger disputing allegations of S&T politicization by Bush administration), *available at* http://www.npr.org/templates/story/story.php?storyId=1687466; TJ Kelleher, *After the Storm*, SEED MAG., Jan. 13, 2009, http://seedmagazine.com/content/article/after_the_storm/ (Marburger maintaining that all S&T criticisms of Bush administration were "urban legend[s]"); Andrew C. Revkin, *White House Calls Editing Climate Files Part of Usual Review*, N.Y. TIMES, June 9, 2005, at A25 (Marburger' approving of disputed White House climate change reports); Daniel Smith, *Political Science*, N.Y. TIMES MAG., Sept. 4, 2005, http://www.nytimes.com/2005/09/04/magazine/04SCIENCE.html (Marburger "consistently maintained that [UCS-like complaints were] a distortion of the administration's position").

III.
S&T ADVISEMENT IN THE OBAMA ERA

So how can the Science Advisor bounce back from nearly a decade of neglect and compromise? The damage done to the standing of the office during the Marburger years has underscored the need for a new approach. Fortunately, under the Obama administration some positive steps have been taken. First and foremost, Obama chose to restore the Science Advisor's "Assistant" title and with it direct access to the President.[48] This development, along with Obama's choice of the highly respected physicist John Holdren for the Science Advisor position, was met with much praise by the S&T community.[49] At Holdren's nomination, Obama also pledged to allow independent S&T advice to flow freely through the White House and to consult his S&T advisory team "even when it's inconvenient—especially when it's inconvenient," paraphrasing the title of Al Gore's climate change documentary.[50] This was a prelude to the now-famous section of Obama's Inaugural Address where he stated that "We will restore science to its rightful place," in direct repudiation of the outgoing Bush administration.[51]

Obama's choice of Holdren for Science Advisor is highly significant because of the implications it has for the way the Obama administration intends to treat issues of science and technology. Holdren is one of, if not the, most distinguished scientists to be appointed as Science Advisor. A Harvard professor, MacArthur "genius grant" fellow, and former President of the American Academy of Arts and Sciences,[52] Holdren's broad qualifications for the job were affirmed in his unanimous confirmation by the

48. David Kramer, *Holdren Appointment Confirms Obama's Climate Change Focus*, PHYSICS TODAY, Feb. 2009, at 28.

49. *See id.*; Peter N. Spotts, *Obama's Science Appointees Called a Team of All-Stars*, CHRISTIAN SCI. MONITOR (US), Dec. 21, 2008, http://www.csmonitor.com/Environment/Global-Warming/2008/1221/obama-s-science-appointees-called-a-team-of-all-stars. One scientist even gushed about the announcement of Holdren and other members of Obama's S&T advisory team that "[n]o president since the days of Benjamin Franklin will have been so well served in matters scientific." Andrew C. Revkin & Cornelia Dean, *For Science Adviser, Dogged Work Against Global Perils*, N.Y. TIMES, Dec. 22, 2008, http://query.nytimes.com/gst/fullpage.html?res=980CE3DE153DF930A15751C1A96E9C8B63 (quoting Lewis M. Branscomb). Former Science Advisor Lane was and remains a huge supporter of Holdren. *See* Lane Interview, *supra* note 23.

50. President-elect Barack Obama, Weekly Address (Dec. 20, 2008).

51. President Barack Obama, Inaugural Address (Jan. 20, 2009).

52. *John P. Holdren – Curriculum Vitae*, http://www.whrc.org/about_us/whos_who/cv/jholdren.htm (last visited Apr. 12, 2010).

U.S. Senate in 2009.[53] But what is perhaps most intriguing about Holdren's background as it relates to his role as Science Advisor is the fact that he has long been an outspoken voice on energy and climate issues and the urgent need for the federal government to address them more seriously.[54]

Holdren laid out his views on the climate crisis in an exhaustive January 2008 *Science* article in which he wrote:

> Facing the menace of growing, human-caused disruption of global climate, civilization has only three options: mitigation . . . adaptation . . . and suffering. . . . We are already doing some of each and will do more of all, but what the mix will be depends on choices that society will make going forward.[55]

Moreover, Holdren has not appeared to soften his rhetoric since moving into his West Wing office. In another article published months after Holdren's Senate confirmation he wrote:

> [Climate change] is no longer a hypothetical or distant issue. It is real and it is upon us. The climate is changing markedly nearly everywhere. The air and the oceans are warming, mountain glaciers are disappearing, permafrost is thawing, sea ice is shrinking, the great land ice sheets on Greenland and Antarctica are slipping, and sea level is rising. And the consequences for human beings are already being felt: more heat waves, floods, droughts, and wildfires; tropical diseases reaching into the temperate zones; vast areas of forest being destroyed by pest outbreaks linked to warming; hurricanes and typhoons of greater power; and coastal property increasingly at risk from the surging seas.[56]

Compare Holdren's blunt, borderline apocalyptic words to those of his predecessor Marburger, who in a 2007 Senate hearing admitted that anthropogenic climate change was a "very serious issue" but refused to clearly endorse strong, near-term efforts to address it:

Senator John Kerry: [Y]ou're the chief Science Advisor to the President . . . How urgent do you believe it is that we put in place

53. *Obama's Science Adviser Starts Job*, MSNBC.COM (Mar. 20, 2009), http://www.msnbc.msn.com/id/29795769/.

54. For a comprehensive list of Holdren's notable climate and energy-related publications from prior to his appointment as Science Advisor, *see* David Sassoon, *A John Holdren Reader*, SOLVE CLIMATE NEWS (Dec. 18, 2008), http://solveclimate.com/blog/20081218/john-holdren-reader.

55. John P. Holdren, *Science and Technology for Sustainable Well-Being*, 319 SCI. 424, 430 (2008).

56. John P. Holdren, *Energy for Change: Introduction to the Special Issue on Energy & Climate*, INNOVATIONS, Fall 2009, at 3. .

some kind of mandatory [regulatory framework] in order to meet [the carbon emissions goals] science is telling us we must meet?

Dr. Marburger: . . . [The] issue of exactly how you go about changing the behavior of a large fraction of the human population of the world is one that. . .

Sen. Kerry (interrupting): Just answer the first part of the question – how urgent do you believe the science is telling us it is? It's a simple question.

Dr. Marburger: I believe the science is telling us that it's important to begin to address the emissions of greenhouse gases. . .

Sen. Kerry: So it is urgent?

Dr. Marburger: . . .and we need to do it as soon as we can.

Sen. Kerry: Does that mean it's urgent?

Dr. Marburger: [undecipherable]

Kerry: You're the Science Advisor, I hear you resisting the word urgent.

Marburger: There is, yeah absolutely, there is a sense of urgency here, you're. . .

Sen. Kerry: A sense of urgency? Or, is it, in your judgment, is it really urgent?

Dr. Marburger: In my judgment, it's important to begin to reduce our greenhouse gas emissions as soon as possible. . .

Sen. Kerry: The top science advisor to the President is resisting using the word urgent.

Dr. Marburger: (slight pause) Yes, I am resisting using the use of the word urgent. I think that the, I think the, frankly. . . I think . . .

Sen. Kerry: Frankly, I think you need to resign.[57]

The plain fact is that by appointing a figure as unabashedly proactive on climate and energy issues as Holdren to the Science Advisor position, as opposed to a Marburger-like doormat, President Obama indicated that he intends to take strong action in those areas. This is true whether or not Holdren has substantial political influence on the President's decisions; that is, whether he tracks closer to the "objective" or the "spokesperson" model is irrelevant. If Holdren is more of an objective advisor, expressing his views to the President clearly and without political reluctance, it can be taken as a sign that Obama, unlike George W.

57. Rick Piltz, *Marburger vs. Connaughton Rhetoric On Need for "Urgent" Action on Climate Change*, CLIMATE SCI. WATCH (Dec. 2, 2007), http://www.climatescience watch.org/index.php/csw/details/urgent_rhetoric.

Bush, truly does welcome independent voices from the S&T community even when they bear those "inconvenient truths." In turn, if Holdren is more of a spokesperson advisor, the fact that he has not modified his rhetoric since being appointed to urge less than forceful action on the climate issue strongly implies that the Obama administration shares his views and is using the Science Advisor as a conduit to publicly express them.

Of course, the natural counterarguments to this analysis are that Obama is free to simply ignore Holdren's strongly-stated views; or that the White House, through Holdren, may want to appear committed to addressing climate change while avoiding any actual, substantive action on the issue. These arguments carry some force because the Obama administration has not yet (at least at the writing of this article) put its full weight behind comprehensive climate and energy legislation in the same way that it has with the American Recovery and Reinvestment Act (aka the so-called "Stimulus Package") or the Affordable Health Care for America Act (aka "Healthcare Reform"). But these arguments are belied by the fact that in partnership with the White House the House of Representatives has in fact already passed such a climate and energy bill.[58] On a parallel track, the Environmental Protection Agency, under the leadership of the highly regarded Obama appointee Lisa Jackson,[59] has also taken steps towards regulation of greenhouse gases.[60]

Other signs point to the Science Advisor's relevance within the Obama administration. News reports have indicated that Holdren is deeply involved in White House-Senate efforts to pro-

58. Steven Mufson et al., *In Close Vote, House Passes Climate Bill*, WASH. POST, June 27, 2009, at A01 (noting that "[t]he bill passed . . . after a furious lobbying push by the White House and party leaders").

59. Despite some concerns, Jackson's appointment was generally applauded by environmental groups and political progressives. *See* Press Release, Sen. Frank Lautenberg, Lautenberg Statement on President-elect Obama's Choice of Lisa Jackson to Head The EPA (Dec. 15, 2008), http://lautenberg.senate.gov/newsroom/record.cfm?id=306035 ("Lisa Jackson will be an excellent EPA Administrator"); Brad Johnson, *Corzine: Lisa Jackson 'Has Done A Remarkable Job' In A 'Constrained World,'* THINK PROGRESS: THE WONK ROOM (Dec. 9, 2008, 9:37 AM), http://wonkroom.thinkprogress.org/2008/12/09/corzine-lisa-jackson-remarkable; Martin Longman, *Obama Makes More Picks*, BOOMAN TRIBUNE (Dec. 11, 2008, 12:58 AM), http://www.boomantribune. com/story/2008/12/11/0582/2779; Jonathan Stein, *Why Some Enviros Hate Obama's EPA Pick*, MOTHER JONES (Jan. 13, 2009, 2:53 PM), http://motherjones.com/blue-marble/2009/01/why-some-enviros-hate-obamas-epa-pick.

60. Christi Parsons & Jim Tankersley, *EPA Adds Teeth On Emissions*, L.A. TIMES, Dec. 8, 2009, at A1.

duce energy and climate legislation that can be reconciled with the House bill.[61] In addition, an analysis of the regularly updated White House visitor logs shows that Holdren has personally held frequent meetings with influential public and private sector figures, including former Vice President Al Gore, Microsoft CEO Steve Ballmer, USAID Administrator Rajiv Shah, and Center for American Progress President John Podesta, to name just a few.[62] Holdren was even involved in one of the Obama administration's most celebrated public events thus far, the so-called "Astronomy Night" on the South Lawn of the White House.[63]

IV.
STRUCTURAL CHALLENGES OF THE SCIENCE ADVISOR

Despite all this, some commentators believe that Obama's rhetoric in support of the Science Advisor, even if followed up by good-faith efforts and commitment, is not enough to elevate the office to a Koop-like level of influence. Pielke believes that the office has been a "victim of its own success," or at least the success of S&T advising as intra-government practice: he notes that in 1950, just a few years prior to the birth of the Science Advisor,

61. '""John Kerry, *Facts Are Stubborn Things: George Will and Climate Change*, THE HUFFINGTON POST (Feb. 27, 2009, 4:47 PM), http://www.huffingtonpost.com/john-kerry/facts-are-stubbornthings_b_170657.html ("John Holdren is a friend of mine and one of the best scientific minds we have in our country"); Lisa Lerer, *Kerry Takes Marquee on Climate Bill*, POLITICO (Oct. 1, 2009, 6:51 AM) http://www.politico.com/news/stories/0909/27788.html ("In March, [Senator] Kerry hosted a dinner at his Georgetown home to discuss how to move climate change legislation through the Senate" that included Holdren, among many other notables); Darren Samuelsohn, *Senate Dems Opening to Nuclear as a Path to GOP Support, 60 Votes*, ENV'T & ENERGY DAILY (Oct. 7, 2009), http://www. eenews.net/EEDaily/2009/10/07/1/ ("Kerry said he is trying to get buy in from the Obama administration . . . citing meetings that included Obama, White House political adviser David Axelrod, White House science adviser John Holdren and Energy Secretary Steven Chu").

62. *White House Visitor Access Records*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA, http://www.whitehouse.gov/briefing-room/disclosures/visitor-records (search for "Holdren") (last visited June 12, 2011).

63. Telephone Interview with Dr. Neal Lane, former U.S. Sci. Advisor (Nov. 23, 2009) (statement of Dr. Neal Lane) ("[Holdren's] fingerprints were all over [the event]); Joel Achenbach, *On the South Lawn, A White House 'Star Party,'* WASH. POST – "44" BLOG (Oct. 7, 2009, 9:40 PM), http://voices.washingtonpost.com/44/2009/10/07/on_the_south_lawn_white_house.html; President Barack Obama, Remarks by the President at an Astronomy Event with Students (Oct. 7, 2009), *available at* http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-at-an-Astronomy-Event-with-Students/ (transcribing public dialogue between Obama and Holdren).

the federal government employed roughly 200 S&T experts.[64] By 2003, that number had metastasized to approximately 8,000 S&T experts serving on over 400 advisory committees across all sectors of the federal government.[65] Accordingly, as Pielke's theory goes, it is simply hopeless for the Science Advisor and his staff to attempt to master all those S&T issues and act as the President's generalist sage like the first and most powerful Science Advisors did.

However, Pielke does suggest that the Science Advisor may still be able to operate effectively by taking on a new role of "options czar."[66] This role is based on the premise that the President and his staff cannot possibly sift through the overwhelming flood of S&T advice that inundates the White House day after day, courtesy of those 8,000 S&T experts and their 400 advisory committees. Accordingly, the Science Advisor can act as a gatekeeper for that information and only present advice to the President that is relevant to the policy and political issues at hand. Of course, delegation of authority to the Science Advisor over what S&T advice reaches the President will in turn require that the White House place a high degree of trust in the technical and political skills of the Science Advisor. Technical, because the Science Advisor as "options czar" will require a deep interdisciplinary understanding of the S&T issues involved in many different areas of policy in order to sort out the relevant minority of advice from the irrelevant majority. Political, because the Science Advisor will simultaneously need to know which S&T options are politically feasible for the President. It would not do, for example, for the Science Advisor to present a $5 per gallon gasoline tax or nationwide gasoline rations as the only two possible options for America to reduce its dependence on fossil fuels.

Further, it is clear that in order to maintain the President's trust as an "options czar," and indeed in any advisory role, the Science Advisor must maintain a certain degree of loyalty to the President. As former Science Advisor Lane (who has taken on a role as a kind of "public conscience" of the office since stepping down) has consistently maintained, the Science Advisor must "support the president in his policies, whatever those policies

64. Roger A. Pielke, Jr., *Who has the ear of the President?*, 450 NATURE 347, 347 (2007) (referencing William T. Golden), *available at* http://www.nature.com/nature/journal/v450/n7168/full/450347a.html.

65. *Id.*

66. *See id.* at 348 (quoting Daniel Tankelovich).

are, and you have to do that while preserving your integrity as a scientist and the integrity of the office."[67] This is a difficult balancing act, as was made so clear during the second Bush administration. But no modern President will accept a Science Advisor who seeks primarily to act on behalf of outside interests instead of in full support of the President. The fever pitch of American national politics today and the "siege mentality" instinctive to all modern White Houses will simply not allow it.

One possible model of a trusted yet independent science advisor who wields real influence behind the scenes, especially regarding climate and energy issues, is the United Kingdom's counterpart to the US Science Advisor: the Prime Minister's Chief Science Adviser (hereinafter CSA).[68] In parallel fashion to the birth of the US Science Advisor, the CSA position was created by Prime Minister Winston Churchill during WWII to advise him on war-related S&T matters.[69] Sir David King, who served as CSA from 2000 to 2007, posited that Churchill "wanted a scientist who could give him objective hard facts and challenge him, and the post still exists in that form."[70] A similar, objective, "Honest Broker"-style approach to the position was promoted by Sir David's predecessor, Lord Robert May, who served as CSA from 1995 to 2000.[71] May once stated with regard to science advising that:

> The role of the scientist is not to determine which risks are worth taking, or deciding what choices we should take, but the scientist must be involved in indicating what the possible choices, constraints and possibilities are . . . The role of the scientist is not to decide between the possibilities but to determine what the possibilities are.[72]

Clearly, the US and UK Executive S&T advisory apparatuses share similar operating philosophies. One area where they differ, however, is in the visibility of their respective public profiles. Sir David has stated that in addition to advisory duties the CSA

---

67. *Id.* at 347.

68. *About Us*, UK COUNCIL FOR SCI. AND TECH., http://www.bis.gov.uk/cst/about-cst (last visited June 12, 2011).

69. *See* Interview by Harry Kreisler with Sir David King, UK Chief Sci. Adviser, at the Univ. of Cal., Berkeley, Cal. (Sept. 5, 2005) [hereinafter Kreisler Interview], *available at* http://globetrotter.berkeley.edu/people5/King/kingcon2.html.

70. *Id.*

71. *Robert May*, UNIV. OF OXFORD, DEP'T OF ZOOLOGY, http://www.zoo.ox.ac.uk/staff/academics/may_r.htm (last visited June 11, 2011).

72. PIELKE, *supra* note 36.

is mandated to occasionally act as a spokesperson for the government and "go on the national media in the UK when we're faced with major situations and attempt to explain [them]."[73] Sir David noted that the CSA also has a role in explaining "how we in Britain might better manage the risk in [the] future to our populations and to other populations through [a] better understanding of the science."[74] However, this statement and the notoriety that it implies might come as a surprise to many British citizens. British news outlets have described the CSA as a "low-profile,"[75] "mysterious"[76] individual who "stay[s] backstage."[77] Indeed, upon the occasion of Lord May's retirement in 1999 British journalists expressed delight at having "unearthed the scientist who whispers in the Prime Minister's ear."[78]

This reduced profile may actually be a bonus when it comes to the political effectiveness of the CSA. It is not hard to imagine that outside of the spotlight the CSA is better able to speak with honesty to the Prime Minister without fear of public condemnation for his views.[79] The modern CSA certainly seems to have more direct influence over UK energy and environmental policy than its US counterpart, at least if Sir David's tenure is any kind of barometer. For example, in 2001, Sir David was a major player in the Blair government's containment response to the "foot-and-mouth disease" epidemic that decimated and nearly destroyed the British animal husbandry industry.[80] In 2002, Sir David was described as a "key figure" behind the shift in the Blair government policy regarding nuclear power, which it had formerly neglected but later strongly supported as a tool to com-

73. Kreisler Interview, *supra* note 69.

74. Kreisler Interview, *supra* note 69.

75. Roger Highfield, *Scientists Take Government to Task*, DAILY TELEGRAPH (UK), Mar. 28, 2007, *available at* WESTLAW, 2007 WLNR 5819012.

76. Roger Highfield, *Official: Politicians Don't Reveal the Truth*, DAILY TELEGRAPH (UK), Nov. 14, 2006, *available at* WESTLAW, 2006 WLNR 19733399.

77. Rachel Campbell-Johnston, *Scare Given Short Shrift by Knight of the Scientific Realm*, TIMES (London), Feb. 20, 1999.

78. *Id.*

79. One might also consider Machiavelli's warning "of the danger of being prominent in counseling [sic] any enterprise." NICCOLO MACHIAVELLI, *Discourses on the First Ten Books of Titus Livius, in* THE HISTORICAL, POLITICAL, AND DIPLOMATIC WRITINGS OF NICCOLO MACHIAVELLI (Christian Detmold trans., J.R. Osgood and Co. 1882) (1513).

80. *See* Kreisler Interview, *supra* note 70; Mark Henderson, *New Chief Scientist Is Expert in Green Issues*, TIMES (London), Aug. 31, 2007, http://www.timesonline.co.uk/tol/news/science/article2358045.ece.

bat global warming.[81] In 2004, he was instrumental in the creation of the UK Energy Research Centre, an influential sustainable energy advisory council that coordinates the overall UK energy research effort.[82] And in 2006, he argued forcefully that the UK should seek to stabilize atmospheric CO_2 at the controversial level of 550 ppm,[83] a number that was effectively enshrined in law two years later in the UK Climate Change Act of 2008.[84]

Clearly, the CSA can boast a much greater track record of accomplishment in recent years than the US Science Advisor. However, it is possible that the CSA's comparatively elevated influence is due in large part to the UK's different system of government. The devilish issue that the US President faces of what communications between himself and his Science Advisor are "privileged"[85] may simply be moot in the UK because the Prime Minister, in addition to his role as Executive, is simultaneously a member of Parliament.[86] On this note, some US groups have recommended that the positions of Science Advisor and Director of OSTP be held by two separate individuals.[87] The argument here is that the separate Science Advisor would not require a Senate

81. *See* Philip Webster & Mark Henderson, *Blair Set to Put Nuclear Power Back Online*, TIMES (London), Sept. 2, 2002; Henderson, *supra* note 81 ("[Sir David King was] closely associated with shaping [government] policy on global warming"). However, regarding nuclear power Sir David King later stated that even though "it looked like the argument was won," government efforts to promote it were subsequently put on hold. Daniel Clery, *UK Science Adviser Offers Some Parting Shots*, 318 SCI. 1862, 1862 (2007).

82. *See* Robin Pagnamenta, *Oil Will Peak in 10 Years, Government Warned*, TIMES (London) Oct. 8, 2009, http://www.ukerc.ac.uk/support/tiki-index.php.

83. *See* Philip Webster et al., *Blair Cooling on Green Targets for Kyoto Successor*, TIMES (London), Mar. 29, 2006, http://www.timesonline.co.uk/tol/news/politics/article698360.ece.

84. *See* David Adam, *Too Late? Why Scientists Say We Should Expect the Worst*, GUARDIAN (UK), Dec. 9, 2008, http://www.guardian.co.uk/environment/2008/dec/09/poznan-copenhagen-global-warming-targets-climate-change.

85. Because the position of Director of OSTP is subject to Senate confirmation, the Science Advisor, who is simultaneously acting in his capacity as Director, may be required to testify before Congress. *See* STINE, *supra* note 32, at 9. 'However, if the Science Advisor has the dual status of "Assistant to the President" it is possible that he may refuse to divulge advice given to the President on separation of powers and/or executive privilege grounds. *See* STINE, *supra* note 32, at 8.

86. House of Commons Info. Office, *Ministerial Salaries*, (Sept. 2010), http://www.parliament.uk/documents/commons-information-office/m06.pdf (noting that the UK Prime Minister receives both a ministerial and parliamentary salary).

87. *See* NATIONAL ACADEMY OF SCIENCES ET AL., SCIENCE AND TECHNOLOGY FOR AMERICA'S PROGRESS: ENSURING THE BEST PRESIDENTIAL APPOINTMENTS IN THE NEW ADMINISTRATION 19-20 (2008).

confirmation and would therefore be free of his duties of Congressional testimony, unlike the Senate-confirmed Director.[88] Additionally, proponents believe that having two S&T voices in the White House would strengthen the hand of the S&T community and its involvement in the creation of White House policy.[89] However, this approach comes with numerous potential liabilities: the Science Advisor alone would have few resources, staff support, or budget; the two S&T advisory figures could easily get into political turf battles with each other; and again, no White House will be persuaded that installing additional agents of outside interest groups within the White House is a good idea.[90]

Another recommendation along these lines is to separate the two roles and reduce OSTP to a purely "spokesperson" function.[91] In OSTP's place, Congress could create a robust, S&T advisory agency (known as the "Science and Technology Policy Agency," or STPA) to be run by the Science Advisor.[92] The STPA would exist to provide S&T advice to the President while being wholly controlled and funded by Congress, thereby limiting any threat to the objectivity of the Science Advisor that inheres when the position is at least partially controlled by the President. While this proposal holds considerable appeal, its political feasibility is questionable. It would probably not receive much support from the White House since it would require the President to give up all control he has over the Science Advisor over to Congress. Congress in turn might not be thrilled by the idea of creating a new federal agency for which it would then be forced to appropriate additional funds and spend effort supervising indefinitely. In fact, Congress fairly recently defunded its *own* S&T advisory office, the Office of Technology Assessment, as part of Newt Gingrich's "Contract with America" initiative to reduce the size of the federal government.[93] Therefore, it seems unlikely that even the current, Democratically-controlled Con-

88. *See id.*

89. *See id.*

90. *See id.*

91. *See* KELLY ET AL., *supra* note 20, at 48.

92. *See* KELLY ET AL., *supra* note 20, at 48.

93. Nancy Scola, *OTA 2.0: Reviving the Expert Agency with a New Public Participation Component*, PERSONAL DEMOCRACY FORUM: TECHPRESIDENT (Apr. 15, 2009, 11:09 AM), http://techpresident.com/blog-entry/ota-20-reviving-expert-agency-new-public-participation-component. Over a decade later, Gingrich remained pleased by his elimination of OTA, which he called "bureaucratic and obsolete." *Earth Chats: Newt Gingrich*, SLATE (Apr. 21, 2008, 12:27 PM), http://www.slate.com/id/2189557/pagenum/1.

gress would be interested in starting up an entirely new S&T advisory agency devoted to the assistance of a separate branch of government.

V.
SUGGESTIONS FOR THE SCIENCE ADVISOR

For too long, the Science Advisor has suffered from a steady diminishment of institutional respect within the White House. Yet although the Science Advisor may never be completely free of its dependency on the preferences of the President, it may still be able to reverse its slide into irrelevance by building and maintaining an iron-clad reputation for advisory integrity. The Science Advisor can serve the President, the public, and the S&T community best if there is no question as to the unbiased objectivity of its advice: part "Honest Broker," part spokesperson (within limits), while avoiding all association, real or suggested, with scientifically bogus, ideologically motivated viewpoints.

The Obama administration can foster this new reputation in a number of ways. First, Holdren should fulfill his and the Obama administration's pledge to "provide both the reality and the perception that science is not being misused in pursuit of political agendas" in the federal government.[94] On this note, in March 2009 the Obama administration announced its intention to create, through OSTP, a plan "designed to guarantee scientific integrity throughout the [E]xecutive branch" via established procedural mechanisms and rules.[95] Obama set a 120 day deadline for this plan to be issued.[96] However, it took until April 2010 for OSTP to follow through on Obama's good government rhetoric and release what it called its "Inaugural Open Government Plan."[97] According to former Science Advisor Marburger's old nemesis, the Union of Concerned Scientists, the long overdue plan is a "good step forward . . . to open[ing] up the workings of the federal government in ways that will better inform the public and help expose the misuse of scientific information by federal

94. Elizabeth Kolbert, *Obama's Science Adviser Urges Leadership on Climate*, YALE ENV'T 360, (Aug. 13, 2009), http://e360.yale.edu/content/feature.msp?id=2179.

95. OFFICE OF THE PRESS SEC'Y, THE WHITE HOUSE, PRESIDENTIAL MEMORANDUM ON SCIENTIFIC INTEGRITY (Mar. 9, 2009), http://sharp.sefora.org/wpcontent/uploads/2009/03/2009sciintegmemfinalrel.pdf.

96. *Id.*

97. OFFICE OF SCI. & TECH. POLICY, EXEC. OFFICE OF THE PRESIDENT, OPEN GOVERNMENT PLAN 1-56 (2010), http://www.whitehouse.gov/sites/default/files/microsites/ostp/100407-ostp-opengov-plan.pdf.

employees."[98] But it is only a first step, and UCS is correct in its criticism that further measures are necessary to create true, meaningful protections of scientific integrity within the Executive branch and its agencies.[99] Indeed, lasting restoration of scientific integrity is impossible unless a culture of political impartiality is allowed to take root within the S&T sectors of the federal government, and that will only come about through continued nurturing from elected leaders and a watchful public.

Second, the office of Science Advisor must remain occupied by a credible voice on climate change. The American people are fortunate to have a Holdren serving as Science Advisor. With the possible exception of nuclear weapons, there is no S&T-related issue of greater importance to the world today than climate change, and as has been shown Holdren is an expert on it.[100] We can assume with some confidence that, given Holdren's oft-asserted concern about the climate issue, he is unlikely to water down his advice regarding it with politically appealing but ineffective policy mirages, such as the infamous notion of "clean coal."[101]

On the contrary, Holdren can be expected to forcefully advocate for dramatic action on climate change in his consultations with the President and other decision-makers. That kind of persistence is key, especially given the number of competing interests involved in an issue as a complex and far-reaching as climate change.[102] Accordingly, if the United States is to successfully address the climate issue, then the White House must maintain at least one voice deeply versed in the science of the matter and comfortable articulating the policy implications to decision-makers. Far from serving as a mere Issue Advocate (at least so long

98. Press Release, Union of Concerned Scientists, Obama Administration's Open Government Plan a Good Step Forward, But Must Go Further (Apr. 7, 2010), http://www.ucsusa.org/news/press_release/obama-administrations-open-0373.html.

99. *Id.*

100. *See* Holdren, *supra* note 55, at 424-437.

101. However, Holdren has made noises to the effect that improved coal technology may be *part* of the climate change solution. Indeed, in March 2010 Holdren stated, "There's no such thing as clean coal. There is such a thing as cleaner coal technology." Press Release, Kevin Brown, Sch. of Natural Res. & Env't, Univ. of Mich., Wege Lecturer Holdren Optimistic About Climate Change Legislation (Mar. 23, 2010), http://www.snre.umich.edu/newsroom/2010-03-23/wege_lecturer_holdren_optimistic_about_climate_change_legislation.

102. *See* Marianne Levelle, *Tally of Interests on Climate Bill Tops a Thousand*, THE CENTER FOR PUB. INTEGRITY: THE CLIMATE CHANGE LOBBY (Aug. 10, 2009), http://www.publicintegrity.org/investigations/climate_change/articles/entry/1608.

as Holdren avoids alignment with any particular interest groups), on climate change, the Science Advisor must operate as an independent, clarion voice calling for swift action regardless of the political context. Holdren has done an admirable job on this mark so far, and he should continue his efforts.

Finally, the Science Advisor must zealously guard the credibility of his office. Unlike Marburger, and like former Surgeon General Koop, Holdren evinces no willingness to risk his professional integrity or the integrity of his office simply to maintain the President's favor. Rather, he appears to be the kind of public official whose political ambitions remain secondary to his commitment to candor and responsible leadership. Future Presidents should be encouraged to appoint individuals of Holdren's caliber as Science Advisor, since ultimately no real reform of the office can occur if qualified, honorable people are not asked to lead it. Nor indeed can the Science Advisor contribute to S&T-related policy accomplishments of any real merit if he or she constantly yields to the siren call of Presidential politics at the expense of the substantive demands of science. Although, like all Executive branch advisors, the Science Advisor "serves at the pleasure of the President,"[103] his duties are subordinate to the higher requirement of the federal government to "promote the general Welfare" of the people of the United States in all of its actions.[104] To adequately fulfill this mandate, the Science Advisor must serve with personal integrity, public-mindedness, and a measurable degree of political independence.

In these ways the Science Advisor/OSTP system can fulfill the vision its founders had for it and provide the President with a healthy flow of dependable S&T advice long into the future.

103. John P. Deeben, *Serving at the Pleasure of the President: The Nomination Papers of the United States Senate, 1789– 1946*, PROLOGUE, Winter 2005, at 50.

104. U.S. CONST. pmbl.