

**Science, Policy and Politics: A View from Capitol Hill  
(or Twenty Years of Schoolin' and They Put You on the Day Shift)  
Bob Palmer – April 18, 2005**

**I**t's a great pleasure to be back in Boulder. I had the pleasure of working with the last three Congressmen from Boulder – Tim Wirth, David Skaggs, and the current incumbent, Mark Udall – since all of them served on the House Science Committee. I also came here regularly in the 1980's for conferences and meetings in the early days of the Global Change Program. In fact, I distinctly recall having a discussion around a small table at NCAR in the mid-1980's about what to call this new science. Should it be the International Geosphere-Biosphere Program, or the Global Habitability Program, or something else? After an hour or two, we all agreed to spread the word that it should be called "Global Change" – it helped that we had leaders like Jack Eddy and Francis Bretherton around the table – and darn if the name didn't stick.



I came to Capitol Hill in 1979 as a AAAS Congressional Science Fellow and my first exposure to a science policy issue was the re-authorization of the Ocean Dumping Act. This is the law that was originally passed in response to cities dumping garbage and sewage sludge in the unregulated oceans, exporting their problems 12 or more miles offshore.

My boss – Jerry Ambro, Chairman of the Environment Subcommittee on the House Science Committee – had a problem – the dredge spoils from Connecticut harbors on the other side of the Long Island Sound were contaminating the waterfront of his constituents on the New York side of the Sound. Putting science to work, we solved this problem very simply. We amended the Ocean Dumping Act to declare that the Long Island Sound was in fact the ocean (a great surprise to Rand McNally), an amendment that brought the tougher dredge regulations of the Ocean Dumping Act into play in the Sound. Twenty years later, something similar happened when Lake Champlain was actually declared by Congress to be a Great Lake.

Then as this Ocean Dumping Act saga continued, I had my first exposure to the second greatest deliberate body on Earth – the Floor of the U.S. House of Representatives. Now when a vote is taking place on the Floor, the sponsors of the legislation typically stand near the entrances to the chamber and explain the gist of the bill to the entering Members. I expected to hear Mr. Ambro saying something like, "Vote yes and you can expect that mercury, cadmium, and lead levels in the sediments of Long Island Sound will slowly decline over the next 50 years". Instead Mr. Ambro came up with something much catchier: "Vote "Yes" for Clean Fish". A Member sitting near me looked up at the electronic board displaying each Member's vote, turned to another Member sitting next to him, and said, "You just voted for dirty fish". That Member, horrified, quickly re-inserted his voting card and got back on the clean-fish bandwagon.

This was all a sobering initial exposure to the use of science in policy making, but I managed to survive the Ocean Dumping Act and another 25 years of science policy in Washington, D.C. before retiring to Florida earlier this year.

About 6 months ago, my friend Roger Pielke wrote an article entitled “The End of Research”, which dealt with Federal funding for S&T. Roger concluded that “over the past decade S&T have experienced a second golden age, at least as measured by federal funding, which has increased dramatically in recent years at a pace not seen since the 1960s.” We can discuss science budgets more fully in the question-and-answer session if you’d like, but I’d like to use this talk to discuss a different question. If this is a golden age for S&T funding, is this also a golden age for science policy? I imagine that the students in the audience studying science policy might be interested in this question. I’m not talking about the study of science policy – in universities and elsewhere – which appears to me to be reasonably healthy, based on the readings that Professor Pielke and Professor Byerly assigned me before I came out here. I’m asking whether this is also a golden age for science policy as practiced at the Federal level by the executive and legislative branches of our government.

Whatever we conclude about science policy, it is clear that we continue to have a lot of science politics, which I participated in eagerly for the past 25 years. Science politics consist of budget fights, program creation, tweaking, oversight and destruction, and philosophical disagreements of all sorts. This can be a blood sport, and it can also be a lot of fun, even though it has serious outcomes. And in a broader sense, beyond science politics, it is true that the Federal scientific enterprise continues to react to pressing societal issues, as it did with the spikes in space and energy funding in the 1960’s and 1970’s. We now have a significant homeland security R&D program, for example.

But – and this is my main theme today – for many years, both in the executive and legislative branches, there has been no consistent or focused debate about the roles of S&T in meeting our broader national goals, as I believe there has been about the rightful place of other aspects of our culture. To list a few, this broader debate has occurred regularly in recent years on issues like abortion and abstinence, Federal support of education, the role of the military in promoting democracy worldwide, the role of individual rights in a society threatened by terrorism, and capital punishment. The appropriate place for these and many other issues are sifted and sorted all the time – often because they are seen by our political leaders as fertile ground for drawing political differences between the two parties – but debates over issues which are less overly political – such as the debate about how to connect the conduct and goals of science with broader goals in society – just aren’t taking place, at least not in the national government.

So regrettably, I’ve concluded that science policy is in anything but a golden age. It is rusty. It is stagnant. Engagement between the two branches and the two political parties is minimal. The great debates of the day are being held somewhere else. To the extent that they occur at all, science policy debates have gone underground. In short, it is an

excruciatingly boring and unproductive time for the practice of science policy in the halls of government.

Now I apologize to any students who came to this talk excited about their future careers in science policy. You could say that I'm just a bitter, retired-to-Florida, out-of-power Democrat and you could well be right. Let me try to explain why I've reached this rather grim conclusion. In keeping with the theme of this series (to which I'm invited as a sort of adjunct because constitutionally the Congress has an independent role in science policy, complementary to that of the Executive), I'll look at the roles of the Executive Branch and the Congress in Setting Science Policy in the U.S., particularly the degree of cooperation and conflict between the two over last 25 years. As someone who loves both science and politics, I apologize in advance for the depressing nature of my message.

Science advisors go back to the middle of the 20th century, or to Jefferson if you want to consider Merriweather Lewis a science advisor. One of the early science advisors – Ed David, who's appearing later in your series – was fired by President Nixon in 1973. At the same time, Nixon abolished the Office of S&T and the President's Science Advisory Committee, supposedly because Nixon – not the least paranoid man ever to hold the Presidency – felt that he was getting bum advice from his scientific advisory apparatus, on issues like the ABM treaty and the SST. Ed David may disagree with that analysis, but at any rate, Gerald Ford – for you youngsters in the audience, he succeeded President Nixon in 1974 and was a creature of the Congress, having served as House Minority Leader – was eager to re-instate the role of the science advisor, which led two years later – in 1976 – to passage of the National Science and Technology Policy, Organization, and Priorities Act. The Act not only established a Federal administrative organization for science policy, it also attempted to articulate a science policy for the Nation. The goals that the law set are quite general, but they nonetheless represent a serious effort to tie the Nation's S&T enterprise to broader societal goals. For example, the law declares that S&T should contribute to “fostering leadership in the quest for international peace and progress toward human freedom, dignity, and well being...”

Now I was still in graduate school at the time, but I suspect that the OSTP Act of 1976 was a true collaborative effort between a Republican Administration and a Democratic Congress to restore dignity and visibility to the position of science advisor, three years after the sacking of Ed David. In fact, Vice-President Nelson Rockefeller pushed the bill within the Administration and even testified in favor of the bill before the Science Committee. Having a Vice-President testify was a big deal, and it was carefully handled to make sure that no precedent was established that could compel future Vice-Presidents to testify. For example, the Committee did not actually invite the Vice President; they welcomed him.

I may be romanticizing the passage of the OSTP Act, but in my opinion it represents the last successful effort involving the legislative and executive branches to deal cooperatively and productively with the broadest aspects of national science policy. And that was almost 30 years ago.

Since then, there have been a few, largely abortive legislative efforts to catalyze a discussion of national science policy. Congressman George Brown was probably the most successful at this in his role as Chairman of the House Science Committee in the early 1990's. Mr. Brown was legendary for his constant prodding of the scientific community to engage in the political process and to think about and take responsibility for the impacts of their work. And then there was a brief period in the beginning of the Clinton Administration when the government's S&T resources were overtly and consciously being re-directed toward economic competitiveness. In 1995, when Republicans assumed power in the Congress, they brought with them a new direction in science policy, which I would summarize in a nutshell as: basic research good; everything else bad. Of course, these new leaders reserved the right to define "basic research," which, it turned out, included such applied items as the Space Station and hydrogen research. Later in the 1990's Speaker Newt Gingrich assigned Congressman Vern Ehlers, a former physicist, the job of producing a new U.S. science policy. Mr. Ehlers did write a report entitled "Unlocking Our Future: Toward a New National Science Policy". But that report did not tie S&T policy to any overriding goals, and even Mr. Gingrich later admitted it was a timid endorsement of the status quo.

One final observation about the recent failure to set broad science policy goals. In 2001, the Bush Administration – particularly its Office of Management and Budget – became very enthused about applying the Government Performance and Results Act (GPRA) to the evaluation of lots of government programs, including R&D programs. This exercise had the potential to elucidate the priorities and philosophical underpinnings, as well as the outcomes rather than the outputs, of Federal investments in R&D. This is clearly a very difficult exercise, and I applaud OMB for trying, but it's pretty clear four years later that GPRA has not produced a clear set of national S&T priorities, nor has it done much to clarify funding decisions. In fact, today's OSTP seems focused on outputs than ever before. It is an OSTP that is obsessed not with outcomes, but with explanations of why its budget numbers are wonderfully healthy.

Over the years, I have seen many instances of productive cooperation between the Administration, its science advisors and the Congress – cooperation that goes beyond cordial relations to joint discussion, formulation, planning, and implementation. Admittedly, these instances have all pretty much been issue-related rather than sweeping, broad issues of science policy like the passage of the 1976 OSTP Act. In the lingo of atmospheric scientists, these might be called meso-scale issues.

For example, the Space Station was under the threat of imminent demise throughout the early 1990's, but was saved by one vote in the House of Representatives in 1993 – and several times after that by slightly larger margins– through a high degree of cooperation involving the Administration, elements in the Congress, and industry lobbyists. I know that the Space Station may not really qualify as "science" but it is certainly technology and besides it's always been sold as a scientific research laboratory.

Cooperation was strong on broad questions of industrial policy both during the first Clinton campaign and during the first two years of the Clinton Presidency. This policy

involved the creation and nurturing of an alphabet soup of programs aimed at enhancing U.S. competitiveness through joint government-industry R&D programs like the Advanced Technology Program and the Manufacturing Extension Partnership in the Department of Commerce, which were aimed respectively at development of breakthrough technologies and providing technological assistance to small companies. The Clinton industrial policy also included the Technology Reinvestment Program (aimed at conversion of defense resources and facilities to civilian purposes), expanded Cooperative Research and Development Agreements between the private sector and Federal laboratories (especially in DOE, NIH, DOD, and NASA), USCAR (a CRADA between several government departments and the Big 3 auto makers), and many other programs. Some of these competitiveness programs were controversial – for example, environmentalists criticized USCAR as a sell-out to the Big 3, who were let off the hook on tougher emissions standards in return for their participation in this massive joint R&D program.

Cooperation between the OSTP of George Herbert Walker Bush and the Democratic Congress was also quite strong during the passage of the Global Change Research Act in 1989-1990. There were elements in the Administration and in the Congress fighting the passage of the Act, but OSTP and key Congressional Committees joined together to overcome this opposition. Cooperation was also quite strong between the George Herbert Walker Bush Administration and the Congress (and industry lobbyists) in protecting the Super-Conducting Super-Collider. While there wasn't broad Congressional agreement on the SSC, there was at least open, vigorous debate – which ultimately led to the SSC's demise in an overwhelmingly negative House vote in 1993.

Finally, in the early Clinton years, there was again vigorous discussion between the branches of government on the Space Station and specifically the role that the Administration envisioned for the Russians on the Station. Vice-President Al Gore and others in the Administration had direct and frequent interactions with Congressional leaders from both parties. Ultimately, the Station continued, although the Congress did disagree with the Administration on whether or not the Russians should be a part of the critical path leading to the Station's completion. In the end, the Russians were put on the critical path – in other words, the Station couldn't be built or maintained without them. The Congress did not support that decision. But ten years later – after the Columbia Shuttle accident and after the U.S. human space flight program became completely dependent upon Russian launches, Russian re-supply missions, and Russian rescue capability – that decision alone probably saved the Station from crashing into the Pacific Ocean.

What do all these issues have in common? First, except for the passage of the OSTP Act, they are all meso-scale issues, each dealing with one limited aspect of science policy. Secondly, they proceeded through regular order, with hearings, Committee action, Congressional Floor debate and Floor votes, and regular consultation and discussion. In other words, their resolution was transparent and democratic. Thirdly, they were all resolved more than ten years ago.

Do I see any of this bipartisan, government-wide engagement now? The answer is virtually none, not even at the meso-scale level. Why? In my perhaps overly partisan view, the problem started in the late 1980's, when S&T became politicized in Congress as part of a broader strategy by Republicans to seize back control of the Congress – a goal which they eventually accomplished in the 1994 mid-term elections.

It may surprise some of you to hear that the public partisan fight over science policy – exemplified today in the reports by Congressman Henry Waxman and the Union of Concerned Scientists – did not start during this Administration. It has actually been going on in the Congress for about 15 years.

There have always been a lot of specific fights on science-related issues on the Hill (for example, building the Clinch River Breeder Reactor in the early 1980's). But partisan fights were largely non-existent until the late 1980's when Newt Gingrich – ironically now an outspoken and highly entertaining advocate for science – stirred up his followers in the House of Representatives to fight the Democrats on everything, including science. I can go into specifics in the question-and-answer session if anyone is interested, but let me just say that beginning in the late-1980s, we fought on all sorts of issues and with a spirit of meanness, that had not been seen for decades.

Parenthetically, I should mention that I heard the recently deposed Speaker Gingrich give a breakfast speech to a AAAS audience in 2000 or 2001. The speech was mesmerizing, as Mr. Gingrich ventilated fully on the proper role of S&T in our society, specifically the relationship between science and health care, science and the economy, science and international relations. What an irony that a man who has more ideas about science policy than any public figure since George Brown created so many of the partisan problems that continue to plague us in science policy.

One of the casualties of this new partisanship has been the difficulty of passing significant S&T legislation. I believe we've had one NASA authorization bill, in the year 2000, enacted in the past 12 years. When your colleague Rad Byerly was on the Hill working on space issues in the 1970's and 1980's, it was typical for a broad NASA bill to pass at least once if not twice in every Congress. I distinctly recall the NASA bill of 1994. In retrospect, we Democrats should have cut off negotiations and rammed the bill through the House early in that session. But the talks did drag on. Finally, late in that session, all the issues were worked out at a substantive level, but House Republicans used every procedural trick in the book to keep the bill from enactment. Why? Because their playbook called for running a national election against a do-nothing, corrupt Democratic Congress. Even a little NASA bill on which there was no substantive disagreement wasn't allowed to pass.

The current situation in space policy is instructive in that regard. While there has been interest among Republican leaders in Congress for the past three years in passing a new space policy bill, they fear that the votes are simply not there to implement the President's new space vision. So those who control the Congressional agenda – like Texas's ethically challenged Tom Delay – simply work their miracles behind closed

doors ... and the money flows. The most significant changes to the nation's civilian space policy in 40 years are moving forward, but there are no votes, no public debate, no democracy. That may change this year, but I'll believe it when I see it.

The situation was much healthier 12 years ago, when the fate of the SSC was determined by open, transparent Floor votes in the House and Senate. Then at least there was a debate. Or 20 years ago, when the Congress declared that commercial and foreign users of the Space Shuttle should pay exactly \$74 million dollars for each launch, rather than the real average cost of more than \$500 million dollars. That was a foolish policy, which by establishing an artificial and very low price, discouraged alternative access to space and put our country in a real hole after the Challenger accident. But at least the decision was made in the open, through a transparent process amendable to discussion, amendment, and democracy.

By the way, the corrosive effect of this partisanship on resolving public policy issues is not limited to space policy. Environmental legislation has also pretty much ground to a standstill over the last 10-12 years. Significant environmental policy is now made through executive orders or it's surreptitiously inserted into legislative riders, rather than through the regular order that we read about in the civics books. Why? Because it's easier, and because when important environmental provisions are slipped into massive pieces of legislation at the last minute, Members of Congress don't have to answer for their public votes from a politically active environmental community.

In 1995, the cocky new Republican leaders in the House of Representatives charged ahead and went right to work passing the 10 items of the "Contract with America", a platform of procedural and substantive policies that had been the centerpiece of their election strategy. One of these 10 items was the "Risk Assessment and Cost Benefit Act of 1995" (called the "Regulatory Reform Act" in the Senate). This was a sweeping bill which superseded provisions in many of the environmental statutes passed during the previous 25 years. The bill easily passed the House with only about five Republican defections, but due to pressure from a wide range of public-interest groups, the bill stalled in the Senate. Members who voted for the bill in the House heard from their constituents, and within a year, it was no longer five but about 30 to 40 Republicans who regularly defected from party orthodoxy on key environmental votes. This rate of defection was not tolerable to House Republican leaders, so environmental legislation simply stopped moving, and the strategy went underground. Within the next few years, the Data Quality Act and the Data Access Act were both slipped into omnibus appropriations bills with little debate or discussion. Industry lobbyists bragged that they had accomplished much more by slipping in these two provisions under the cloak of darkness than they had ever anticipated achieving in 1995 through regular order. The recently issued peer-review regulations are a direct product of these bills, and no hearings have been or will be held on the regulations in Congress.

Of course, this approach to governance does take casualties – namely transparency, accountability, and democracy.

A final casualty of this increasing partisanship is Congressional oversight. One of the most important institutional roles for the Congress is to oversee the executive branch and its operations. I remember working with Rad Byerly in the early 1980's on the future of the Landsat program. We learned that the OMB had hatched a plan to turn over the nation's weather and land remote-sensing satellites to a private company – Comsat – in a non-competitive sweetheart deal. We also learned that the Deputy Secretary of Commerce – Guy Fiske – who was responsible for this decision, was negotiating in private to become the new CEO of Comsat. It was the clearest, most brazen conflict-of-interest I witnessed in 26 years on Capitol Hill. The Members that we worked for blew the lid off this arrangement, the Deputy Secretary was fired, and in the long run the Landsat and weather satellite programs were allowed to continue as government programs. In this instance, Congress fulfilled its oversight responsibilities admirably.

Today, on the other hand, a highly disciplined Republican Congress conducts virtually no oversight on the Republican administration. The list of issues that should be examined is long. In many cases, I believe that sincere Republican legislators like House Science Committee Chairman Sherry Boehlert would like to examine some of these issues. But orthodoxy is enforced pretty seriously by the party. So, whatever one may think about the issue, we never get a public debate, for example, on the misuse of science and scientific integrity. I would note in passing that the Democrats on the House Science Committee did organize a “hearing” on scientific integrity when the UCS report was issued. We invited UCS and Dr. Marburger, but he demurred.

Nor do we get oversight hearings on the commercialization of universities under the Bayh-Dole Act. Or on the militarization of our civilian space program. Or the Administration's meek response to cyber-security issues. Or NASA's weak financial management. Or OMB's new peer review rules.

So, assuming that you buy my argument that an increasingly partisan, corrosive atmosphere in Washington has affected even the pursuit of science policy, why should it matter? Science will certainly continue to perk along nicely, buoyed by tens of billions of dollars of Federal funding and the seemingly immutable law (discussed earlier in this series by Dr. Marburger) that science will always receive 11 percent of Federal discretionary funding. Perhaps science policy in the end will benefit from flying under the radar screen, immersed in the incremental budgetary machinations that seem to return to Washington every spring as faithfully as the buzzards to Hinckley.

The problem with this view, and the reason why science and technology policy matters, is that the world is changing incredibly rapidly, and science and technology need to be key elements in helping us understand and respond to these changes. Consider for a minute just how much the policy environment has shifted in the past seven to eight years. In the 1990's we were deeply concerned, first about how to re-invest the budgetary peace dividend due to us at the end of the Cold War, then later about how to invest the burgeoning Federal surplus. Remember that? Today, we have the largest defense budgets and among the largest Federal deficits in history.

We also have the challenge of terrorism and the threat of attacks on our own soil from weapons of mass destruction. Health care costs continue to spiral upward, threatening our small businesses and our future fiscal stability, despite our massive expenditures on health research, which seem only to exacerbate the cost problem. We face an increasingly competitive and capable Asia, whose current ability to challenge our manufacturing base, and even our high-tech manufacturing base – and before long our research and development base – seems limitless. Off-shoring of more and more technical jobs is inevitable, and no one can say with confidence where the jobs of the future are going to come from in this country. Will the strength of our science and technology mean that we will simply out-innovate the rest of the world? If so, will the so-called creative work remain in the U.S., while the manufacturing base continues to be out-sourced? If so, does this mean we will need more or fewer trained scientists and technicians? Who knows?

And as our new competitors – particularly China and India – continue their rapid development, we will continue to see bottlenecks in the global production and distribution of all sorts of raw materials. This is reflected today in the rising price of gasoline at the pump, and the shortage of building materials in Florida.

None of these challenges will be solved by science, but they will all require the wise application of science. My concern is that in an increasingly partisan environment, they won't even get serious consideration, because of concern about partisan advantage and because of a political culture which makes it increasingly difficult to reach across party and ideological barriers.

As an example of this debilitating partisanship, I return to Dr. Marburger. When I left the Hill in January, Dr. Marburger has served in his position for three and a half years. Not once in that period did he come up to the Hill to meet, get to know, or pay a courtesy visit to the Ranking Democrat on the House Science Committee. There were two such Democrats during that period, neither of whom was overly partisan. In fact, the first of the two – Congressman Ralph Hall from Texas – later switched his allegiance to the Republican party. This was all in stark contrast to the last Republican science advisor, Allan Bromley, who seemed to be in my boss George Brown's office nearly every week during his four-year tenure. I do not blame Dr. Marburger for this behavior; he is clearly a serious, thoughtful, and decent man. I blame an overly partisan White House staff which thinks that Democrats simply don't matter.

As an example of an issue that could use some creative non-partisan scientific and political thinking, consider for a minute the example of comprehensive energy legislation, which has been careening around the Congress for the past six years. Any halfway intelligent ten-year-old realizes that for a myriad of good reasons, this country needs to do a much better job of conserving energy and of reducing our reliance on imported oil and gas. I can't imagine a current crisis that calls out more clearly for political leadership. As a big fan of Robert Caro's recent book *Master of the Senate*, I wonder what a leader with the skills of Majority Leader Lyndon Johnson would have done facing this situation.

Perhaps he would have brokered a deal that allowed increased oil and gas exploration in the U.S. – offshore and/or in Alaska – but only in combination with, which is to say in return for, much more stringent vehicle efficiency standards. This deal would offend a lot of people and a lot of powerful interests, but it certainly would produce significant results – environmental, economic, and national security results – within a decade. The shame today is that nobody even conceives of grand compromises like these. The political leadership is lacking and the partisan barriers are too steep. If we had an LBJ driving for a political consensus on the issue of energy dependence, science and technology would be freed up to provide a myriad of possible solutions and a wealth of information to inform binding political negotiations and compromises. Without this leadership, science is doomed to remain on the sideline. There is no way that it can lead to a solution by itself.

Your Federal government is not responding well to the many political challenges of the day – energy, environment, health care, global economic competition – whose resolution would greatly benefit from the wise application of S&T. Otto Bismarck remarked in 1867 that politics is the art of the possible. He didn't go on to say that science can help us to define what is possible, but that is also true. And when politics is overly fettered by partisanship, so is science – in the sense that its legitimate role in opening up more room for negotiations and the development of policy options is severely limited. This unfortunately is the niche that science policy occupies today.