

THE POLICY SCIENCES CENTER, INC.

127 Wall Street, Room 322

P.O. Box 208215

New Haven, Connecticut 06520-8215 U.S.A.

Tel: (203) 432-1993 • Fax: (203) 432-7247

MYRES S. McDOUGAL
Chairman (1906-1998)

W MICHAEL REISMAN
Vice Chairman

ANDREW R. WILLARD
President

Please Reply to: DR. LLOYD ETHEREDGE
7106 Bells Mill Road
Bethesda, MD 20817
Tel: (301) 365-5241
Fax: (301) 657-4214
Internet: lloyd.etheredge@yale.edu

August 21, 2003

Honorable Robert Bennett, Chair
Joint Economic Committee
G-01 Dirksen Office Building
Washington, DC 20510

&

Honorable Sherwood L. Boehlert, Chair
House Science Committee
2320 Rayburn Building
Washington, DC 20515

&

Honorable John McCain, Chair
Senate Commerce, Science and Transportation Committee
508 Dirksen Office Building
Washington, DC 20510

Dear Senator Bennett, Representative Boehlert, and Senator McCain:

I am writing to follow-up my letter of August 7 concerning the scientific breakdown of all 53 models of the economy (CBO, Administration, private sector/academic), the damage to the country, and the need for an independent inquiry into the mismanagement of basic research. I believe Congress will conclude that the breakdowns reflect fundamental problems and that government scientific agencies must be reformed.

I have followed these problems for more than two decades, from the days when - as a junior faculty member at MIT - I received an NSF grant to study rates of science-based learning in public policy. I believe that I can provide a useful perspective.

The seeds of the current breakdown were sown in the 1980s when the National Academy of Sciences/National Research Council received a contract to recommend new investments in social science data during the next decade

(projects similar to the Hubble telescope in astronomy) to accelerate progress. At the time, the Reagan Administration also had begun the practice - now common - to add and use the benefits of psychological mechanisms in its package of policies to accelerate economic growth. The NAS/NRC group (the Luce-Smelser Commission) killed the honest broker tradition of American science and the recommendation to develop new measures of these policies and their economic benefits.

Their derailment is important because measurement and control (by experiment methods or statistical methods) are required for science. Economic models work by computing coefficients for equations, usually relying upon historical data (e.g., quarterly time series). When relevant causal variables are unmeasured and missing, the statistical technique of linear regression analysis changes the values of the coefficients for the remaining variables. The published coefficients become uninterpretable and can be larger or smaller than their true values, or even change signs, and - with missing variables and missing historical data - the errors of the equations in all future research also become larger. (Even random effects do not reliably even-out across historical data. Random error (for example in the independent variable) always (in the bivariate case) misleadingly decreases the value of coefficients toward zero).

Thus, uncorrected breakdowns of scientific integrity probably help to explain the eventual impotence of the 53 models. However, it also is important for Congress to know that, even if the current equations are apparently failing, they may contain useful insights that we cannot perceive or compute because of the error and garbage that have cumulated since the top-down, de facto destruction of scientific integrity for basic research in economics designed by the National Academy of Sciences. There also may be other important psychological or other variables that we cannot identify or use to forecast economic growth, prevent recessions or speed recoveries. And there may be many other important changes in the world that have gone unmeasured and tend to undermine the reliability of other coefficients of measured variables.

Behind the scenes, this astonishing and alarming derailment has been intensely controversial. The efforts of knowledgeable scientists to correct the problem began with collegial discussions and continued into the early 1990s with a formal oversight appeal of the Luce-Smelser recommendations supported by the professional staff of the National Research Council. Then, the doors were aggressively slammed by a former Democratic political appointee, Dr. Frank Press, who directed both the NAS and the NRC. [Later, it also came to light that there were deeper problems and a core group of the Luce-Smelser Commission apparently had colluded - after reviewing proposals from

more than 600 social scientists - to award competitive victory to their personal research interests (i.e., of Luce, Ferejohn, Fiorina, and possibly others) behind closed doors and without recusing themselves or disclosing their conflicts of interest to NSF or the other government agencies who paid for the study.¹

The next steps were blunt and direct: an off-the-record meeting of distinguished scientists with the wrong-doers organized by the Carnegie Commission on Science, Technology, and Government. The issues were brought to the (Ryan) Commission on Research Integrity and President Peltason of the University of California system called Dr. Joyce Justus in the Clinton White House (as did I). Your investigators will find dozens of letters from respected, serious, alarmed and (eventually) angry social and physical scientists, in several rounds, trying passionately to repair the integrity of scientific advice and prevent the cumulative erosion and damage to the country that was a predictable outcome. The problems still are compounding, as the psychological ideas in the packages of the Bush Administration continue to be stonewalled by the successor NAS/NRC Committee on National Statistics.

There are additional dimensions to this story that will be available to your investigators; discussed in the enclosed letter to the National Science Board; or covered in background material on www.policyscience.net.²

I do want to note, however, that Dr. Alberts et al. have destroyed the self-correcting mechanisms of science and have maneuvered to establish and control a national dominance hierarchy in science policy with themselves at the summit. Dr. Alberts et al. have been criticized in peer review journals and before the Ryan Commission: Thus, they have an obligation, under the rules of science, to reply in writing in scientific journals and defend - or withdraw - their reports. (When there are potential safety defects in even a small percentage of automobile tires, we expect a public warning and recall). Instead, they resorted to stonewalling and a coverup - an operating style that continues.³

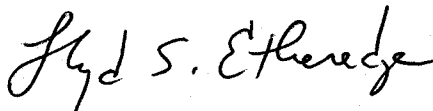
I assume that, in any public investigation, Dr. Alberts et al. will offer excuses. But your investigators will find many rounds of correspondence and legitimate criticisms by many scientists (although the National Academy falsely claims to represent the consensus of its members). Dr. Alberts et al. have experimented with the argument that they only give advice "when they are asked" - although it is ludicrous to suppose that somebody - who? - must chase after Dr. Alberts and our nation's most distinguished and brilliant research scientists to cross-examine them about whether the basic data for scientific integrity and reliable science-based policy are available. The defense also ignores basic professional ethics - in medicine, Dr. Alberts et al. would be

guilty of malpractice and negligence; the original purposes for the Luce-Smelser report; thirty years of core grants to the NAS/NRC's Committee on National Statistics to support self-initiated projects; and the history of rejected requests from social scientists and members of the Academy.^{4 5}

- In sum, I believe you will find that Dr. Bruce Alberts and his organizations, as supervised by NSF and the NSB, are unreliable for fast-discovery economics research. I think the Executive Branch's system will be more successful if the National Science Board is reconstituted along the lines of the Federal Communications Commission, with full-time Commissioners, additional professional staff, and public hearings conducted with due process.

The self-governance of scientists can operate as well or poorly - and with many of the same types of potential abuse - as any type of government or for-profit corporation. I am afraid that the extraordinary trust, given by scientists to a few of their colleagues in Washington to shape national science policy and scientific recommendations behind closed doors, has been betrayed and that your investigators will find, at this point, that there is not much innocence left.

Yours truly,



(Dr.) Lloyd S. Etheredge, Director
Government Learning Project

1. Dr. Frank Press had permitted the Luce-Smelser Commission to use sleight-of-hand rhetoric ("many others could have been chosen") and it never was required to produce compelling scientific justifications for its civic derailment of the social sciences and restrictions on the role of our research universities.
2. At this point, however, there only appears to be one senior social scientist/economist (Dr. Elizabeth Hoffman, a new appointee to the National Science Board) in a position to investigate the breakdowns and invent institutional solutions. And I believe the task - she is employed full-time as President of the University of Colorado system, which is facing severe budget problems - will be beyond her resources.
3. By stonewalling and coverup - and permitting scientists who are being criticized for wrongdoing in their formal positions of public trust to circulate by private letters conveying regal displeasure - Dr. Alberts et al. have sought to use the institutional credibility of the National Academy of Sciences (a government institution) to discredit critics personally without addressing the issues. And they probably have increased alienation among younger

social scientists and potential whistle-blowers who want to challenge orthodoxies with evidence and to live, as scientists and teachers, with honor and integrity. It serves nobody's interest to have any new Report from the National Academy of Sciences dismissed with a derisive snicker.

4. In 2002, Dr. Alberts was invited to assign a staff economist to NSF to develop a new round of recommendations for 21st century data systems (updating the early Luce-Smelser study). It is my understanding from the professional staff of the National Science Board that no indication of the earlier internal controversy concerning missing data and the breakdown of scientific integrity, or discussion of the need for new measures, was conveyed by Dr. Alberts' organizations, even in response to an invitation.

5. Unless there is top-down suppression, scientists in other fields are energetic about requesting new funds for data and infrastructure (\$18+ billion for the physical sciences in the next decade). I do not believe that the defense is offered in good faith.

THE POLICY SCIENCES CENTER, INC.

127 Wall Street, Room 322

P.O. Box 208215

New Haven, Connecticut 06520-8215 U.S.A.

Tel: (203) 432-1993 • Fax: (203) 432-7247

MYRES S. McDOUGAL
Chairman (1906-1998)
W MICHAEL REISMAN
Vice Chairman
ANDREW R. WILLARD
President

Please Reply to: DR. LLOYD ETHEREDGE
7106 Bells Mill Road
Bethesda, MD 20817
Tel: (301) 365-5241
Fax: (301) 657-4214
Internet: lloyd.etheredge@yale.edu
August 7, 2003

Honorable Robert Bennett, Chair
Joint Economic Committee
G-01 Dirksen Office Building
Washington, DC 20510

&

Honorable Sherwood L. Boehlert, Chair
House Science Committee
2320 Rayburn Building
Washington, DC 20515

&

Honorable John McCain, Chair
Senate Commerce, Science and Transportation Committee
508 Dirksen Office Building
Washington, DC 20510

Dear Senator Bennett, Representative Boehlert, and Senator McCain:

I am writing a joint letter, in your capacity as Chairmen, to bring to your shared attention the alarming, unexpected erosion of our national capacity for science-based economic policy. Since 2001 the Fed has reduced interest rates 13 times without seeing the results predicted by last-generation models of the economy. The enclosed column by Robert Samuelson (The Washington Post, July 30, 2003) notes that all 53 leading scientific models (private/ academic, CBO, Administration) have become unreliable for policy-making and forecasting.

Dr. Samuelson believes that we should "wait it out" awhile longer before we begin to worry. And "If the economy doesn't soon improve, then its problems must be worse than suspected." But I think that he is wrong: If all 53 models have failed, a better scientific hypothesis is that the models are "worse than suspected."

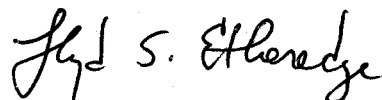
There has been damage to the country, and within the states and districts of every member of Congress. There are no elements in these models, or their picture of the economy, to suggest that adding an 18-24 month delay will be a worry-free way to save them.

When an airline crashes, the FAA does not wait 18-24 months to see if there is going to be another crash. It moves quickly to assemble a team of first-rate people with wide expertise. When there is a space shuttle accident, NASA does not wait to see if another accident occurs.

I am writing to recommend that Congress direct the National Science Foundation to shift into fast discovery mode. (At this point "Everyone's guessing," Robert Samuelson writes). If the world is changing and we want to improve our understanding quickly, NSF must rethink the basic models and collect new types of data, to test new ideas, in the fall of 2003.

I also suggest that Congress establish an independent investigation panel.¹ I have followed science-based economic policy for almost two decades. The failure of 53 models likely reflects cumulative breakdowns across several institutions, and many unheeded warnings.² Our national research agenda has been entrusted almost exclusively to a national science Establishment, a case of "interest group capture" that the public administration literature traditionally warns against. The stalled progress and the paralysis of self-correction mechanisms partly represent vested interests and the internal politics, generational and status rankings, disciplinary turfs, and norms for collegial deference in academia: I would not wish, upon anyone, the fate of becoming entangled with these issues. However, my perception is that there are system-level breakdowns that need to be corrected in the public interest and that the Executive Branch science agencies are not inclined to do it.

Yours truly,



(Dr.) Lloyd S. Etheredge, Director
Government Learning Project

¹ The National Science Board has declined to hold public hearings concerning breakdowns in these areas of its responsibility.

² There are background papers and further discussion on the www.policyscience.net Website. I am attaching a concurring letter from Dr. Robert Reischauer concerning data issues, one of several dimensions of mismanagement.