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Subseries:	Organization Files - PCAST

OA/ID Number:	62078
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Folder Title:
President's Council of Advisors for Science and Technology: General [7 of 7] [1992]

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92-28

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9201332
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

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FROM: LIKINS, Peter: LEHIGH UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 04/08/92

SUBJECT: HE IS FORWARDING HIS RECOMMENDATIONS ON THE CTI AND THE 21ST CENTURY MANUFACTURING INITIATIVE. HE ALSO ASKS IF DR. BROMLEY WOULD BE INTERESTED IN MEETING WITH CONGRESSMEN NAGEL, LANG AND RITTER.

****

DIRECTORATE ASSIGNED: PCAST

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 04/29/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
INDUSTRIAL
PATRICK WHITE

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

Send a copy to G. Wong.
5/29/92 Charles Dickens - please respond as appropriate
No action required

OSTP RECEIVED: 04/14/92 DEPT RECEIVED:
FILE: P-PCAST

CENTRAL FILES:

1332

Lehigh University

Peter Likins, President

Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155
fax (215) 868-6560
(215) 691-5420

RECEIVED
92 APR 14 A10 : 20
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MAIL ROOM

April 8, 1992

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Executive Office of the President
Office of Science and Technology Policy
Old Executive Office Building, Room 360
Washington, DC 20506

Dear Allan:

At the last PCAST meeting you requested advice concerning both the Critical Technologies Institute and the 21st Century Manufacturing Initiative. You recognized the paucity of manufacturing expertise in OSTP and, indeed, throughout the federal government, and expressed a particular interest in obtaining a realistic perspective from industry.

Like you and Gene Wong, I'm a college professor now with a different job assignment, and my impressions of the world of manufacturing are not deeply rooted in personal experience. (I confess that that doesn't keep me silent on the subject, as attested by the enclosure, but I wouldn't want to try to fool my friends.)

I have developed a meaningful appreciation of this field because of the nature of the university that I have served as president now for ten years. Lehigh is unusual in the degree to which its faculty and staff collaborate closely with industry, and that spirit of partnership creates a receptivity to the engagement of full professors with established careers in industry behind them. For these reasons we have on our faculty genuine experts in Manufacturing Systems Engineering (broadly conceived), in addition to active partners with whom we work closely in industry. If I were to call upon these people, I could provide you with abundant and substantial advice regarding both the Critical Technologies Institute and the 21st Century Manufacturing Initiative.

Normally I try to separate my role as a member of PCAST from my role as Lehigh's president, recognizing the potential for conflict of interest. I usually wait for Tom Murrin to say something about "agile manufacturing," although the idea came out of an industrial team led by a Lehigh professor named Roger Nagel. I tried hard not to lobby for Lehigh when John White was in the room, because we are competing in NIST for the establishment of a Pennsylvania Manufacturing Technology Center, based on the integration of our Manufacturers Resource Center and our Ben

Franklin Advanced Technology Center, both funded by the state. I can usually count on Ralph Gomory to note that Lehigh is an exception to his general criticisms of universities that have lost touch with the industrial manufacturing community, so I don't have to deliver these "commercials" myself. It is true however that manufacturing is an important part of our academic program in each engineering department at Lehigh, and the basis for a master's level program in Manufacturing Systems Engineering, as well as the central interest of such outreach organizations as the Iacocca Institute, the Ben Franklin Center, and the Manufacturers Resource Center. This full array of activities gives us a powerful comparative strength in this field, but I try not to promote my university too vigorously in our PCAST meetings.

However, you did ask for advice, and I do know how to get you what I think you need. I think I would be doing you a service if I were to arrange for some of my people to talk to you for an hour, and perhaps talk at greater length to Gene Wong and the OSTP manufacturing panel. (Is that Ralph Gomory and Tom Murrin?) Tom is already somewhat familiar with much of our work here, and particularly with Roger Nagel's work in the Agile Manufacturing sphere. Tom and Roger both have a blend of perspectives from service in industry, government and academia, and they seem to have similar insights in this field.

The Lehigh people to be chosen for this assignment would depend somewhat on the intended mission. Roger Nagel is certainly the key guy, a genuine visionary in this field with an extraordinary combination of relevant experiences in academia (Lehigh), industry (International Harvester), and government (National Bureau of Standards). Roger is a computer scientist by discipline whose field is really manufacturing systems, perhaps with an emphasis on information systems as applied to manufacturing. In more recent years he has given serious attention to organizational systems, moving even further from the factory floor. The notion of "agile manufacturing" presumes the existence of flexible manufacturing hardware, but implementation is more demanding of software and most demanding of human beings, who must adapt to a new corporate culture with enhanced institutional mobility. Roger is now responsible for the manufacturing initiative within the framework of the Iacocca Institute, although he is still the Harvey Wagner Professor of Manufacturing Systems Engineering in the Electrical Engineering and Computer Science department.

On a quite different front, we have also operated for almost ten years the Ben Franklin Partnership Advanced Technology Center, which has worked very closely with a good many manufacturing companies in Pennsylvania. Ben Franklin projects are typically not academic research projects, but more often process and product development projects, typically lasting a year or two. Many of the clients of the Ben Franklin program are entrepreneurial start-ups, and all the companies with which they deal are technologically based. The veteran executive director of our Advanced Technology Center is Mark Lang, who gave up a faculty position in Mechanical Engineering to join the center at its inception.

The third relevant outreach program at Lehigh is the Manufacturers Resource Center (MRC), whose executive director is Edith Ritter. (Edie is the wife of congressman Don Ritter, but I believe that she was working for Lehigh even before Don became a congressman, and she has earned her leadership position here quite independently.) As the name suggests, the Manufacturers Resource Center provides consulting assistance to small- and medium-sized manufacturers, often helping them with Quality programs or management information systems as well as the solution of technical problems on the shop floor. MRC has a small technical staff, and much of their work is farmed out to professional consultants, including only a few faculty. This is the most immediately practical of the three organizations described here, typically accomplishing its objectives in a company in a matter of a few months, and restricted by charter to manufacturers.

I haven't even described here our graduate program in Manufacturing Systems Engineering, which was created by Roger Nagel ten years ago with a multi-million dollar grant from IBM, although it is currently run by Professor Keith Gardiner in the Industrial Engineering department. I wouldn't want to lose the focus of our briefing, and would probably suggest that you meet either with Roger Nagel alone or with Roger, Mark and Edie, leaving out the purely academic people.

I should also call to your attention an all day meeting scheduled for the 6th of May in D.C. under the heading "Partnerships for Competitiveness." (See enclosure.) This is basically the initiative of Mark Lang of our Ben Franklin program, working closely with John White in Commerce. You'll note that Jeff Bingaman and Pete Domenici are on the program. We find considerable interest in this topic in the Congress, and Nagel, Lang and Ritter are all occasionally called upon to testify before congressional committees. If I can get you all together, you might also develop some insights regarding the politics of the manufacturing initiative. (The role that Craig Fields is playing at MCC is of course also significant, and our perspectives may be helpful to you.)

Please let me know if you're interested in making this happen. We're all terribly busy and it may be difficult to make it happen fast. But events are moving very rapidly and some speed is warranted. Let me know what you think.

Warm regards,

Peter

PL:ekg
Enclosure

cc: Tom Murrin w/enclosure
Ralph Gomory w/enclosure

PARTNERSHIPS FOR COMPETITIVENESS

Addressing the Needs of Small and Medium Sized Manufacturers

"I know I am not alone in my concern that many small companies in the U.S. are seriously lagging in the adoption of advanced information-driven technology. Fortunately, recent policy proposals developed by various groups have given us a clear vision of where we need to go and some exciting new approaches on how to get there. This meeting will bring together people who can translate these programs into action and provide the basis to kick off a national effort of sufficient robustness to really get a handle on this issue."

Peter Likins, President, Lehigh University

PARTNERSHIPS FOR COMPETITIVENESS

A one-day conference/workshop to formulate practical strategies for advancing the competitiveness of small companies in the new world of manufacturing.

Need

Small manufacturers in the U.S. have not kept up with their foreign competitors in the use of modern manufacturing practices and advanced technologies. Current technology assistance programs at the state and federal levels provide highly useful services, but they have not been able to obtain sufficient impact relative to the national need.

The trend away from vertical integration toward outsourcing and new customer/supplier relationships presents unexcelled new opportunities for small companies. To reap the benefits of this new manufacturing dynamic, small firms must adopt new business strategies supported by innovative use of technologies and complementary relationships with other firms.

Call to Action

It is now time to bring together key leaders and policy makers from industry, academia, and government to develop a national consensus for a new strategic approach addressing the needs of small companies in manufacturing and other technology-intensive industries. The elements of this new strategy include:

1. The recent *Agile Manufacturing* Study facilitated by the Iacocca Institute at Lehigh University provides a clear vision of the future of manufacturing. This study provides guidance on the means by which the U.S. can regain a position of world leadership and gives direction for shaping policies and programs.

2. Strategic alliances and other flexible organizational structures such as consortium teams and "virtual companies" can assist small companies in attaining high performance and quality standards and in acquiring the technological capabilities necessary for participation in the new customer/supplier networks.

3. Technology assistance programs must develop a new focus to support an infrastructure and culture for collaborative advancement. Such programs necessarily entail the innovative application of electronic communications, more attention to standards, and the leveraging of services to help a critical mass of small manufacturers gain acceptance into the new U.S. system of manufacturing.

PARTNERSHIPS FOR COMPETITIVENESS

Sponsors

U.S. Department of Commerce, Technology Administration

National Association of Manufacturers

Lehigh University/Ben Franklin Technology Center

Participating Organizations

(at press time)

CAM-I, Inc.

Council on High Technology (NAM)

Industrial Technology Institute (ITI)

Microelectronics and Computer Technology Corporation (MCC)

National Center for Manufacturing Science (NCMS)

National Coalition for Advanced Manufacturing (NACFAM)

National Institute of Standards and Technology (NIST)

National Technology Transfer Center (NTTC)

National Tooling & Machining Association (NTMA)

New Mexico State University Shared Manufacturing Facility

Northwest Policy Center

South Carolina Research Authority

Southern Technology Council

The Automation Group (TAG)

Thomas Magazine Group

Agenda

Keynote Speaker Dexter Baker

8:00 - 8:30 **Registration** - Washington Room, Rooftop Level

8:30 - 8:40 **Opening Remarks:** Ralph E. Richardson, Group Publisher, Thomas Publishing Company

Keynote Speakers

8:40 - 9:00 **Government Perspective:** Robert White, U.S. Undersecretary of Commerce for Technology

9:00 - 9:20 **Industry Perspective:** Dexter Baker, Chairman, National Association of Manufacturers

9:20 - 9:40 **Advanced Technology/Academic Perspective:** Peter Likins, President, Lehigh University

Break

10:00 - 11:30 **Discussion of Best Practices from Throughout the Country**
Mark Lang, Executive Director, Ben Franklin Technology Center
Paul Sommers, Research Director, Northwest Policy Center
William Ranson, Director, Southeast Manufacturing Technology Center

11:30 - 12:15 **Industry's Needs and Role**
James O'Neil, VP Manufacturing, Kingsbury Corporation
Livingston Davies, President, Cadkey Inc.

12:15 - 1:05 **Lunch**

1:05 - 1:25 **Luncheon Speaker:** Senator Jeff Bingaman

1:30 - 3:00 **Breakout Workshop Sessions:** Small Group Discussions to Comment on the Models, Suggest Other Options, and Develop a Consensus for Moving Forward

3:00 - 3:15 **Senate Perspective:** Senator Pete Domenici

3:15 - 3:35 **Summary of Breakout Sessions**

3:35 - 3:45 **Washington Perspective:** Leo Reddy, President, National Coalition for Advanced Manufacturing (NACFAM)

3:45 - 3:55 **NIST Perspective:** Donald Johnson, Director of Technology Services, National Institute of Standards and Technology

3:55 - 4:00 **Closing Remarks:** Robert White and Ralph E. Richardson

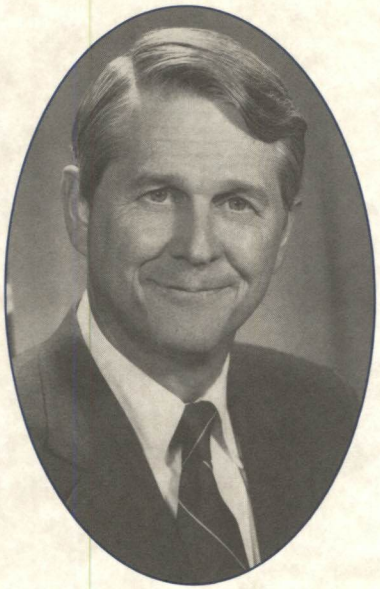
Partnerships for Competitiveness

What the Conference Plans to Accomplish

1. Bring together key players in the industry, government, academic and technology transfer communities to develop a new strategic policy and approach for wide scope technology assistance with significant macroeconomic impact.

2. Develop a consensus for a unified approach to technology assistance for the small manufacturing community, through intensive participant interaction in workshop sessions and reports of best practice implementation efforts.

3. Lay the groundwork for continuation of the dialog and the establishment of an organizational means for facilitating a truly national effort focused on helping small manufacturers to become agile and participate in a new U.S. "system" of manufacturing for the 21st century.

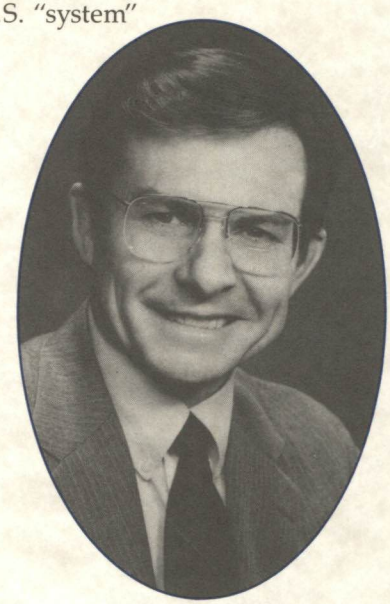


Keynote Speaker
Robert White

When May 6, 1992
8 a.m. - 4 p.m.

Where Washington D.C.
Hotel Washington
15th and Pennsylvania Avenue, NW
(one block from The White House)

Cost A nominal $50 includes lunch



Keynote Speaker
Peter Likins

A limited number of rooms are being held for "Partnerships for Competitiveness" conference attendees at the Hotel Washington at a rate of $125 per night. Call the hotel at 1-800-424-9540 for reservations. Conference rates and access are applicable only until April 21, 1992.

Questions about the conference should be directed to the Ben Franklin Technology Center at 215-758-5200.

PARTNERSHIPS FOR COMPETITIVENESS

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9201046
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: MURRIN, Thomas J.: DUQUESNE UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 03/24/92

SUBJECT: HE IS FORWARDING HIS COMMENTS ON THE REPORT "TECHNOLOGY AND THE AMERICAN STANDARD OF LIVING".

****

DIRECTORATE ASSIGNED:

STAFF ASSIGNED:

ACTION REQUIRED:

STAFF ACTION: Distributed as needed — copy to Wong

****

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

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COPIES TO: D. Allan Bromley
PCAST
INDUSTRIAL

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CONTACT PERSON:

PHONE: EXT:

REMARKS: Actions taken — may close out in tracking system

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FILE: P-PCAST

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DUQUESNE UNIVERSITY
PITTSBURGH • PENNSYLVANIA • 15282
(412) 434-5156
FAX (412) 642-9106

OFFICE OF THOMAS J. MURRIN
DEAN OF THE A.J. PALUMBO SCHOOL OF BUSINESS ADMINISTRATION

RECEIVED
92 MAR 1 A10:23
OSTP
MAIL ROOM

March 24, 1992

Dr. Allan Bromley
VIA FAX #202-395-3261

Dr. Eugene Wong
VIA FAX #202-395-3719

In response to Alicia Dustira's memo of March 11, the following are comments on our Technology and the American Standard of Living draft paper ...

A fine job has been done in preparing the current DRAFT --- and those involved are to be complemented and thanked.

Recognizing the current concerns across our Country over Economic Growth and Attractive Jobs --- and the increasing interest in Quality Improvement and Manufacturing Technology --- it appears appropriate that the subject paper can be improved with the addition of several specific proposals and the following three are suggested ...

• "Building on the substantial success of the Baldrige Quality Award process in Large, Small and Service Companies, it is proposed that the National Quality Awards be expanded to include Government; Health Care and Education.

• "Recognizing that Manufacturing Technology has been a low-priority activity with a miniscule portion of government funding, it is proposed to substantially increase such investments to capitalize on emerging opportunities relating to "agile" and "lean" manufacturing methodologies. For example, DoD's support of the "21st Century" Manufacturing Technologies Study at Lehigh University should be expanded --- and include increased Man Tech and IMIP initiatives.

• Many more Government contracts should be structured to incentivize dramatic improvements in Quality and Productivity --- in order to radically reduce cost and time while substantially improving quality and reliability. The proven practices of the Air Force in this regard should be applies throughout DoD --- and adapted for other Agencies such as DoE, NASA,---"

Happy to discuss now --- or at our April 2 meeting!

Many Thanks!

Good Luck!

God Bless!

Most sincerely,

Tom

Thomas J. Murrin
Dean

cc: Ralph Gomory - Sloan Foundation
Peter Likins - Lehigh University

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9201332
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: LIKINS, Peter: LEHIGH UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 04/08/92

SUBJECT: HE IS FORWARDING HIS RECOMMENDATIONS ON THE CTI AND THE 21ST CENTURY MANUFACTURING INITIATIVE. HE ALSO ASKS IF DR. BROMLEY WOULD BE INTERESTED IN MEETING WITH CONGRESSMEN NAGEL, LANG AND RITTER.

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DIRECTORATE ASSIGNED: PCAST

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

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SENDER'S DUE DATE:

OSTP DUE DATE: 04/29/92

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

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COPIES TO: D. Allan Bromley
INDUSTRIAL
PATRICK WHITE

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WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS:

NRN per AKD

OSTP RECEIVED: 04/14/92 DEPT RECEIVED:

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Lehigh University

Peter Likins, President

Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155
fax (215) 868-6560
(215) 691-5420

RECEIVED
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April 8, 1992

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Executive Office of the President
Office of Science and Technology Policy
Old Executive Office Building, Room 360
Washington, DC 20506

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Warm regards,

Peter

PL:ekg
Enclosure

cc: Tom Murrin w/enclosure
Ralph Gomory w/enclosure

PARTNERSHIPS FOR COMPETITIVENESS

Addressing the Needs of Small and Medium Sized Manufacturers

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Peter Likins, President, Lehigh University

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TYPE: INFORMATION DOCUMENT NUMBER: 9200954
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

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FROM: LIKINS, PETER: LEHIGH UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 03/16/92

SUBJECT: MEMORANDUM TO HAROLD SHAPRIO AND DAVID PACKARD
REGARDING THE UNIVERSITY PROJECT AND FCCSET ROLE.

****

DIRECTORATE ASSIGNED:

STAFF ASSIGNED:

ACTION REQUIRED:

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

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COPIES TO: D. Allan Bromley
Pierre Perrolle
FCCSET
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PHONE: EXT:

REMARKS:

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FILE: FCCSET*P-PCAST

CENTRAL FILES:

Lehigh University

Peter Likins, President

Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155
fax (215) 868-6560
(215) 691-5420

March 16, 1992

MEMORANDUM

TO: Harold Shapiro and David Packard

FROM: Peter Likins

SUBJECT: University Project and FCCSET Role

In order to define a role for FCCSET, we must first define the scope and character of our study. In what follows I have taken a stab at anticipating our synopsis, so we can infer a role for FCCSET or OSTP staff.

As I see our task, it requires a rather fundamental analysis, not merely a set of proposals for incremental change. I'd like to see a focus on "research intensive universities," but this is not a very well defined population for analytical purposes. It may be appropriate to use AAU members as a surrogate population. For some such set of institutions, I'd like to know the federal investment patterns and their trends over time, so we can address the questions raised in the following synopsis. To define the context, we'll need some data also for all four year colleges and universities in America, and for other selected countries as well. To define the total context for research investment trends in the U.S. and other countries, it may be necessary to track federal research expenditures in industry and government laboratories as well. It is important that research investments be broadly segregated in these analyses, distinguishing at least among research projects motivated by health, defense, commerce, and curiosity.

PL/lg

Attachment

Title: American Universities and the Federal Government

Synopsis

The system of colleges and universities in the United States is exhibiting symptoms of stress that may presage fundamental change, driven largely by economics and demographics. It is the business of the federal government to monitor these trends and to anticipate change, intervening only if the national agenda is jeopardized by prospective breakdown of its systems for higher education and national research. The government must be particularly concerned about research-intensive universities, which in the American system are the primary loci of research funded in the national interest by the federal government, and which depend primarily on the federal government to finance their research programs.

Colleges and universities in America vary enormously in their reliance on private sources and the public funds of the individual states, but federal funds are generally available to public and private institutions alike. There may be in the coming decade very significant changes in institutional reliance on state taxpayer dollars and private fees and contributions, but the federal government role can be evaluated without reference to the public/private distinction. Students in all kinds of colleges and universities (and many proprietary schools) can qualify for federal funds, and faculty in all kinds of institutions can compete for federal research dollars. In addition, direct allocations of federal funds can be sought through congressional "earmarking" of funds for almost any entity that might pass Congressional muster, including colleges and universities.

This report represents the views of the President's Council of Advisors on Science and Technology, which bears a special responsibility for research and education in fields that impact the nation's performance in science and technology. Accordingly, the focus is on those universities for which research is a significant element of the institutional mission, referred to here as research-intensive universities. Such institutions also carry most of the responsibility for doctoral level education in America.

The following questions are addressed in the report, with recommendations following from each response:

- What is the national interest in American research-intensive universities? What order of federal investment is appropriate for the benefits derived?

- What should be the nature of that investment?
  What should go to students (undergraduate and graduate) and by what means (loans, jobs, need-based financial aid, scholarships, fellowships, traineeships)?
  What should go to faculty and by what means?
  What should go to institutions and by what means?

- What is the current pattern of federal investment?
  How does that compare to the past in the United States and to standards established in other countries?

- What changes are appropriate in the relationships between the federal government and our nation's research-intensive universities?

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FROM: MURRIN, Thomas J.: DUQUESNE UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 03/11/92

SUBJECT: HE IS FORWARDING VARIOUS MATERIALS AND SUGGESTS DISTRIBUTION TO PCAST MEMBERS.

****
DIRECTORATE ASSIGNED: PCAST

STAFF ASSIGNED:

ACTION REQUIRED: AS APPROPRIATE (distributed to PCAST)

STAFF ACTION: write memo and distribute to PCAST

****
SENDER'S DUE DATE:
OSTP DUE DATE: 03/24/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

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COPIES TO: D. Allan Bromley
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THOMAS J. MURRIN
DEAN
SCHOOL OF BUSINESS
AND ADMINISTRATION

A

TO: Dr. D. Allan Bromley

Of Interest . . .

**Perhaps someone could distribute the attached to PCAST Members ...

Many Thanks!

TJM

First International Symposium On Productivity and Quality Improvement With A Focus on Government

Washington D.C. Hilton
February 11, 1992

"Some Observations on the Critical Importance of Continuous World-Class Quality and Productivity Improvement"

Honorable Thomas J. Murrin; Dean of A.J. Palumbo School of Business Administration; Pittsburgh, Pennsylvania

Thank you, Joyce (Jarrett of NASA)!

Good Morning, Ladies and Gentlemen!

It's a delight and a privilege to be with you!

I enthusiastically congratulate IIE, the Co-Sponsors and all of you! Your program, your presenters, and your participants are truly outstanding --- and your theme, Quality and Productivity Improvement, is critically important!

Over the recent Christmas holidays I counted the number of talks that I agreed to give last year --- and it totaled about 50. So one of my recent New Year's Resolutions was to substantially reduce that number in 1992. But --- as I said sincerely --- it's a delight and a privilege to be here to talk to you on this critically important topic!

Because of all of the experts and expertise assembled for your Symposium, it is clear --- at least to me --- that I can add little of substance regarding the techniques of Quality and Productivity Improvement.

Do excuse me for taking the liberty of putting Quality ahead of Productivity --- because I've learned, over several decades, that Quality Improvement is the best way to achieve Productivity Improvement. And so I try to always mention them in this sequence.

What I will attempt to do is to provide an overview of the relevant challenges facing our Country --- which, I assert, should motivate us, on a top-priority basis, to really commit to continuous, World-Class Quality and Productivity Improvement.

Then, I'll try to summarize the exciting commitment to Quality and Productivity that is sweeping our Nation --- which started in Industry and Labor; later in Government and now in Academe.

Hopefully this will be of interest and value ...

We're all mindful, I expect, of the current concerns over our Economy --- our strong desires for more attractive jobs and job security --- and promising opportunities for our children.

Obviously, this is a key issue in the Presidential campaign --- and is being closely covered by our media.

Let me try to put our situation in context. I'll do this by referencing four unusually insightful articles that recently came across my desk. Some of this may seem somewhat disjointed --- but I think they relate to each other --- and importantly to your symposium.

My first reference is entitled "The World We Are Leaving Our Grandchildren: What We Must Do If We Don't Like It" by a brilliant Pittsburgh-based economist, Dr. Henry Gailliot. Henry states:

"Economics is a rather unusual science. Economists can't really help you much next year. That is, for all of our models and Ph.D.'s, you can summarize our next year's outlook as random. However, economics is very good at dealing with long term issues and telling you with high degrees of certainty what will happen. So as I elaborate this longer term idea, keep that in mind. I do not regard this as a pessimistic speech. A pessimist would simply not deal with these issues and leave the United States, if not physically, then as an investor. The trends are not particularly pleasant, but they are completely reversible. If you are to deal with problems, you must understand the causes, and then change them. That is one of the unique characteristics of the human being. He has the ability to take feedback and decide if he wants to pursue a different course."

"If you had to set a long term goal for economic policy, it would be in a broad and deep sense, that as a nation, our children should have a high probability of being able to live better than we do and their children better than them. This idea is not to be associated with small specialized groups, but as a broad and deep concept. That is known as the American dream. That is the way our world was for a long period of time. Today that dream is at best interrupted and at worst ended. I will tell you why and what we have to do to bring it back. The reason it is interrupted is that our living standards are no longer increasing. Not just related to a business cycle but over a much longer period of time."

Henry goes on to urge that we must increase substantially our investments in both financial capital and intellectual capital if we are to preserve the American dream.

My second reference is an article entitled "America's Changing Strategic Interests" by Professor Samuel P. Huntington of Harvard University. Let me quote Professor Huntington, as follows ...

"Throughout the Cold War, the United States was the number one power in the world: economically, technologically, militarily, diplomatically, politically and culturally. At times, its pre-eminence in these various arenas of power was challenged, and it responded to those challenges, sometimes more successfully than others. In the post-Cold War world, the United States will continue to have an interest in maintaining itself as the number one power in the world. The claims of domestic needs may moderate this priority but they will not eliminate it, and in some important respects they may strengthen it.

"The Soviet Union long ago lost the ideological competition with the United States. Now it is abandoning the military competition. No country is presently in a position to challenge the primacy of the US in terms of global ideological, military, diplomatic or cultural influence. The one area of US weakness is economics and the challenge in that arena comes from Japan. In a world where economic power and economic issues are increasingly important, that challenge is a real one.

"Non-Americans often ask: 'What is it with you Americans and the Japanese? Why is your country so obsessed with Japan?' The answer is that the United States is obsessed with Japan for the same reasons that it was once obsessed with the Soviet Union. It sees that country as a major threat to its primacy in a crucial arena of power. In 1980 in the United States, the Soviet military threat was on the public mind: discussions focused on the comparative statistics of Soviet and American missiles, warheads, throw-weight, bombers, tanks and submarines. Today, the Japanese economic threat is on people's minds. The concern is not missile vulnerability but semiconductor vulnerability. Public discussions focus on comparative Japanese and American figures for economic growth, productivity, high-technology exports, savings, investment, patents, research and development. These are where the threat to American primacy lies and where it is perceived to lie.

"American unilateral actions in the Cold War sometimes served its interests well and sometimes did not. Similarly, while Japan should be pressured to open its economy, 'Japan-bashing' and protectionism are non-productive or counter-productive in terms of US interests. A positive and constructive American strategy would aim to correct the economic weaknesses that have made possible the relative growth of Japanese economic power. These weaknesses include: first, the on-going budget deficit, with which Congress has wrestled but has taken only a first step towards solving; second, the low savings rate of Americans, which shows some signs of improving but is still much too low to provide the resources needed for investment; third, inadequate spending on research and development, particularly for non-military purposes; and, fourth, and most important, the potentially catastrophic deficiencies in the education and training of American youth and the resulting decline in the quality of the workforce."

"The issue for the United States is whether it can meet the economic challenge from Japan as successfully as it did the political and military challenges from the Soviet Union. If it cannot, at some future time the United States could find itself in a position relative to Japan that is comparable to the position the Soviet Union is now in relative to the United States. Having lost its economic supremacy, the United States would no longer be the world's only superpower and would be simply a major power like all the others."

My third --- and perhaps most provocative --- reference is entitled "The Rise and Fall of the American Civilization" by Governor Richard D. Lamm. His comments were introduced with the following preamble:

"Our speaker today is going to take you ahead in time --- 60 years ahead. Imagine yourselves in the Union of North American Republics. It is the year 2050; our speaker is a noted historian on the rise and fall of civilizations."

Now let me quote Governor Lamm as follows:

"I have been asked to discuss the factors that led to the fall of the United States of America. As a historian, I am often asked to do the postmortems on civilizations which have died. As we all know from our history, there are certain similarities in all civilizations that have foundered. In fact, Toynbee observed that all civilizations rise and fall and that the verdict of history was that all great nations committed suicide. Another historian observed that 'all these great civilizations had some common pattern; they all followed a certain progression --- from bondage to spiritual faith; from spiritual faith to great courage; from great courage to liberty; from liberty to abundance; from abundance to apathy; from apathy to dependence; and from dependence once again into bondage.' No civilizations are forever --- they all rise and they all fall.

"In discussing the rise and fall of the American civilization, it will be necessary for me to examine with you the situation at the last time when historians felt this society could have saved itself from disintegration. Consequently, I will use a lot of statistics from the 1980s. Though these figures are now 60 to 70 years old, they are extremely important because they prove that the warning signals of an empire in liquidation were flashing all around, and yet few did anything to retard the unraveling of this once marvelous civilization. We see in retrospect these warning signs, but one has to remember that there are always prophets of doom and they are usually wrong. Yet, we know also that there has never been a nation that has withstood the ravages of time. We thus must weigh the evidence that was available to the citizens in the crucial 1980s and 1990s.

"Like all other great civilizations that disintegrated, the United States of America let its economy stagnate. In 1948, the United States had 44 percent of the world's economic product, an economy eight times larger than Japan, the world's highest productivity rate, and an educational system that was second to none. It was continually running up trade surpluses, and had since the first part of the century.

"By 1991, the generation in charge of America in the 60s and 70s ran up a $3.5 trillion deficit, and slipped to the lowest rate of productivity growth of any in the industrialized world. It went in a wink of the eye from the world's largest creditor nation to the world's largest debtor nation. It had the highest percentage of obsolete plants, the lowest percentage of capital investment, and the highest number of functional illiterates in the industrialized world.

"When the 1980s began, the world's largest corporations were in the United States; when the 80s ended, they were in Japan. When the 80s began, the U.S. was an exporting nation; when the 80s ended, it was an importing nation. When the 80s began, the world's largest bankers were American; when the 80s ended, they were Japanese. When the 1980s commenced, the world's largest stockmarket was Wall Street and the world's largest stockbrokers were American. When the 1980s ended, the world's largest market was in Tokyo and the world's largest stockbrokers were Japanese. What happened? These were not an ignorant people. They were myopic, but not blind. They knew what it took to create wealth, but they ignored all the warnings until it was too late. Decline, like fog, creeps in on little cat's feet.

"Let's start out with the productivity growth. The wealth of a nation is in productivity growth --- it is not in the gold in Fort Knox, nor the numbers across the screens of Wall Street. The wealth of nations is found in the productivity of its people. In the early 1970s, the United States went from the highest rate of productivity growth in the industrialized world to the lowest. Its productivity was one-half the German rate, one-third the French rate, and one-fourth the Japanese rate. From the first oil shock to 1983, increases in annual productivity in the United States were far below those of its major trading partners. In the 1950s, America doubled its wealth every 30 years, and rising expectations could be fulfilled. By 1991, it took over 130 years for America to double its wealth, and America could not fulfill all the expectations that had been built up.

"It is an idol rule of history that great nations eventually have great problems. Greatness is not a permanent geopolitical status. If it were, we'd all be speaking Greek or Latin. History shows that great nations rise, prevail during their hour on the stage, and then decline. The question isn't if decline takes place

--- it's when. No nation has a divine destiny. Most nations develop a deadly decadence. God didn't turn out to be any more of an American than He was English, French, Roman, Greek or Egyptian. Prosperity is not a guarantee --- it is a challenge that must be earned every generation."

Governor Lamm ends by listing ten reasons for what he terms America's "deadly decadence". The first one he cites is that, "The United States let its productivity decline"!

My fourth and final reference is a recent report from my friend and former faculty associate at Carnegie Mellon University, Dr. Steve Miller, who now works with Fujitsu in Oyama, Japan --- and occasionally sends me reports on his insights of Japan. The following are quotes from his recent "Comments On the Oyama Plant Training System" ...

"What impresses me most about the Oyama facility is not its many automated systems, but rather the breadth and depth of the human infrastructure for solving the myriad of problems that are always a part of operating and developing manufacturing systems. A common phrase here is "leveling up". It is a Japanese adaption of English to refer to the process of moving from the current level of capability up to the next level. It represents the image of ascending a staircase, in a gradual and steady fashion.

"When the visitor comes to Oyama, they see the results of this leveling-up process. They see the many automated systems of machines that have been designed and implemented here to improve many aspects of manufacturing performance. Visitors find the factory tour very interesting. Usually, they are overwhelmed by the wide array of manufacturing system accomplishments that can be viewed from the standard tour route.

"But the most interesting aspects of the factory cannot be observed during a factory tour. For the most interesting aspects are not the machines themselves, but the organization of people that create and continue to improve the performance of the manufacturing system."

Steve's report describes this Japanese system for Continuous Quality Improvement --- and ends as follows:

"In concluding, it is important to note that I have not made specific mention of the popular conceptions of the "holy grail" of manufacturing improvement, such as JIT, Statistical Process Control, or the all encompassing and elusive concepts of CIM and Concurrent Engineering. Of course, these practices are important. But ultimately, what is most important to building a strong manufacturing system is the strength of the human infrastructure to resolve technical problems and to create new means of production. To a large extent, this boils down to the ability to analyze and

solve problems, and to design new solutions. And since this all takes place in a very large and complex organizational setting, this problem solving must be done in a highly collaborative and cooperative way as well.

"In short, a factory must have two manufacturing systems running in parallel. The first system is the obvious one that makes today's products. Many aspects of this system can be observed along the route of the factory tour. But the second essential system is the one for manufacturing knowledge required for implementing improvements, and for developing new methods and tomorrow's production system. This system, of course, is not observable along the tour route. And it is this unobservable system of manufacturing knowledge and know-how that is the core competitive strength of a great factory. After all, any company can buy machines and quickly create a physical system of production for today's products that seems impressive to the casual visitor on the factory tour. But only the factory with the second system for concurrently producing know-how with physical products will have the ability to climb to the next higher level required for tomorrow's products, and the next higher level, and on and on indefinitely ..."

From these comments I hope that you get some valuable insights into the momentous challenges facing our Country --- and the critical need for us to achieve Continuous World-Class Quality and Productivity Improvement.

So let's consider what is happening in our United States in this regard ...

In pondering what would be appropriate to say today, I glanced through a cabinet I have at home of some of my old talks and came across one dated May, 1982. It was presented in Detroit to the American Society for Quality Control Congress. Let me quote you a few paragraphs from the beginning of that decade ago talk.

"As you probably are aware, the growth rate of America's industrial productivity slowed in the 1970s and came to a screeching halt in mid-1980. Our productivity actually declined a couple of points in 1981.

"During the same period productivity kept rising in most other industrial nations. Consequently, some foreign companies which could once survive only in their protected home markets can now compete with American industry everywhere, including our home markets here in the United States.

"Encouragingly, more and more American companies are beginning to share a sense of urgency about this serious problem and many are working hard to improve their quality and productivity. In our

country we have the technology, the people and the other resources to meet these economic challenges. What we lack is a national commitment and a well synchronized strategy.

"It's my belief that a truly effective response to our economic problems, and particularly to the competitive Japanese initiatives, requires a unified effort by key segments of American society.

"Our business community is making some progress, and labor and academe are joining in. The crucial missing partner is government. It's therefore incumbent upon all of us to convey a sense of urgency to our government officials at the local, state and federal levels."

Happily, since 1982, much progress has been made by Industry, Labor, Government and Academe.

To sum up my experiences in Industry, I've concluded --- as many others have --- that Continuous Quality Improvement is the single best opportunity for a business executive to simultaneously achieve five very desirable goals: satisfy customers; motivate employees; team suppliers; comfort investors; and win media and public acclaim. Indeed, I know of no other process that holds promise of doing this.

As you know, much progress has been made in many American companies. An outstanding example is Motorola which is approaching reject rates of about five per million parts --- resulting in reductions in their cost of non-performance during 1991 valued at about $700 million. And they've set ambitious future goals for additional substantial reductions in defects throughout the organization; substantially shortened cycle times; and complete Customer Satisfaction.

Labor leaders, as appropriate, have cooperated and contributed also. For example, during my recent stay in Washington, D.C., Howard Samuel, President of the Industrial Union Department associated with the AFL-CIO, played an enlightened and effective role in support of Continuous Quality Improvement.

Happily, Government at various levels is also joining in --- and your Symposium is dramatic evidence of this.

For example, the Department of Commerce, which has been doing an excellent job of coordinating the successful Malcolm Baldrige Quality Award process for industrial organizations, decided in 1989 to apply this process to themselves, and much progress has been made. Accordingly, in November of 1990, Secretary Bob Mosbacher and I presented to an internal unit of Commerce the first Annual Department of Commerce Quality Award, following an evaluation and selection process patterned after the Baldrige process. This

process continues at Commerce --- and much credit should go to Alan Balutis and his associates; including Assistant Secretary Preston Moore.

Largely stimulated by the Federal Quality Institute and the Office of Personnel Management in Washington, D. C., several other federal agencies are doing much the same --- and you're learning about these exciting developments during this meeting.

More recently Academe has joined this 'Quest for Quality.'

At Duquesne University, we are committing to Total Quality Performance. To give you a flavor of what we are doing, let me quickly note that we launched our intensive efforts about a year ago with a day-long Quality Symposium which brought national experts to our campus --- including Curt Reimann who does such an extraordinary job of coordinating the Malcolm Baldrige National Quality Award process ...

Then the recently retired Vice President of Quality and Productivity for Westinghouse, Jack Fooks, conducted a series of several hour workshops on Quality Improvement for about 50 of the University's top administrators --- including the President and his Vice-President(s) ... And Jack is becoming our Executive-in-Residence for Quality Improvement.

In our Business School, we recently had a mini-course on Quality for our faculty --- and it was extremely effective. So much so, that it generated interest in preparing to compete some day for the Baldrige National Quality Award.

Currently we're conducting an M.B.A.-level course on TQM. The faculty is drawn from Industry as well as the University --- and they let me introduce it with a one-hour lecture. And I'm attending the course as a student --- and learning much from every session.

Most recently --- and perhaps most importantly --- our President, John Murray convened all 375 University Faculty members on a wintry Saturday morning for a several-hour Total Quality Performance (TQP) session that he --- and Mike Weber, our Vice President of Academic Affairs --- conducted. To give you an insight into this significant milestone, let me quote some of John's comments ...

"The Total Quality Performance concept is not limited to manufacturing in business. It is applicable to any organization including universities.

"We call it TQP for Total Quality Performance.

"The invariable slogan for TQP is: 'Doing the right thing right the first time.'

"Applying TQP to the Teaching, Research and Scholarship Processes involves four key steps:

(1) "All members of the process participate in analyzing the goals or purposes of the process.

(2) "The full recognition that we, the faculty in this particular process, and we alone, are collectively responsible for the enhancement of each of our students within this particular process and we are empowered to create new and even radically different paradigms to achieve this goal.

(3) "Benchmarking --- Comparison with other processes within the University or the same or similar processes in other Universities; and

(4) "How can we control or assess the new process to ascertain that it results not only in substantial improvement of the process --- but also allows for perpetually continuous enhancement of the process?

"While business leaders speak of TQP or the like, benchmarking, total customer satisfaction, and "doing the right thing right the first time," academics are particularly concerned with Assessment.

Academics are beginning to reassess assessment. Consider, for example, some quotations from of the Journal of General Education in 1991:

"Assessment is a means not only to establish accountability but also to achieve educational benefits.

"Assessment will rise or fall as educators like us grapple frankly with the issue of how to improve programs, not just make institutions accountable.

"Assessment succeeds, i.e., it achieves real benefits, "not only (by) examining whether we are doing what we intended to do but also (by) suggesting specific efforts and experiments to do it better.

"Effective assessment can occur only with the complete participation and empowerment of the educators involved in and affected by such assessment. TQP can occur only with the complete participation and empowerment of the educators involved in their particular process."

And finally, continuing to quote our University President: "The goal of assessment is continuous improvement leading to total quality performance, and total quality performance depends upon highly effective assessment. Both processes insist upon full participation and empowerment of the parties operating the various processes of the corporation or the academy. The synergism is obvious, essential and highly productive. Neither approach should be dismissed because of differences in jargon or acronyms."

So Duquesne University --- and Academe across America --- are joining Government, Labor and Industry in this crucially important commitment.

Accordingly, I hope that we all take away from this Symposium much of real value --- and that we apply this know-how about Continuous World-Class Quality and Productivity Improvement in our respective organizations across our great Country!

Many Thanks for your attention!

Good Luck with your initiatives!

And God Bless!

FROM: Thomas J. Murrin,
Dean

Of Interest ...

Boat children's success shows the way for U.S.

Joan Beck

Some embarrassing questions must be asked about the children of the Southeast Asian boat people who now live in the United States.

Why are these refugee youngsters — most of whom reached the United States unable to speak English and with little but the clothes they were wearing — succeeding so spectacularly and quickly in school?

If American schools are so inadequate, so far behind those in other industralized nations, how come they are doing such a great job of educating the Indochinese refugee children?

The answers point to serious problems not so much in American schools, but in American lifestyles, attitudes and family relationships.

Anyone who is seriously concerned about academic achievement in this country needs to take into account the findings by University of Michigan researchers published in the February issue of Scientific American.

The study focused on a sampling of 536 children from 200 Vietnamese, Laotian and Chinese-Vietnamese families who had been in the United States an average of 3½ years. The families came from ordinary backgrounds. Many of the parents had had little education. Many of the families had spent months or years in Asian refugee camps before reaching the United States, so their children's education had been disrupted. Most could not speak English and knew little or nothing about American life.

The schools these Indochinese refugee children attended were in low-income, urban areas and were not noted for academic achievement.

Yet despite all these handicaps, the Indochinese refugee children were doing exceptionally well academically.

The Southeast Asian youngsters earned good grades, particularly in math and science, where their struggles to learn English were the least handicapping. One in four had an overall A average, half had a B average. Half the youngsters earned As in math.

They also did well on standardized achievement tests, particularly in math and science. Half of them scored among the top quarter of those taking the exams and 27 percent in the top 10th. Even though they were still struggling with English, the refugee children ranked close to the national average in language skills.

What accounted for the remarkable academic success of the Asian boat children, who had so many handicaps to overcome, were cultural values and family patterns, according to the University of Michigan researchers.

Homework was the focus of Asian refugee family life on weeknights, the researchers found. The whole family gathered around a table, working together. Older children typically helped younger siblings. Even when parents could not aid directly with assignments because of limited English, they stressed the importance of studying and saw that no family chores interfered with studying.

The Asian boat children typically spent two to three times as many hours on homework as American youngsters. They obviously enjoyed learning, didn't consider schoolwork a chore and didn't feel manipulated by their parents, according to the University of Michigan researchers.

Children whose parents read to them regularly, either in English or their native language, did better in school than others. Regardless of their language skills, these parents passed on shared wisdom, cultural values and emotional closeness, researchers said.

As other studies comparing Asian and American academic achievement and attitudes have shown, the Indochinese refugee families generally considered success in school to be due to effort — not ability or luck. Parents believed and taught their children the importance of setting realistic goals and working toward them in a disciplined manner. And they reflected such commitment in their own lives, feeling ashamed to be on welfare and working as hard as possible to work their way out of poverty.

These are not the first refugee groups whose traditional cultural values enabled them to succeed in large numbers in American schools, noted the University of Michigan researchers. They cited the experiences of the children of Jewish immigrants from Eastern Europe and Japanese students in the United States after World War II, among others.

And they pointed out that many of these cultural and social values are shared by middle-class Americans whose children do well in school.

"It is clear that the U.S. educational system can work — if the requisite familial and social supports are provided for the students outside school," the study concluded.

American parents and families "must become committed to the education of their children," they emphasized. "They must instill a respect for education and create within the home an environment conducive to learning. They must also participate in the process so that their children feel comfortable learning and go to school willing and prepared to study."

Americans used to know that. If too many families have forgotten it, then perhaps we will have to borrow some cultural and social values from our newest immigrants — or import them, as we now do VCRs and cars.

Joan Beck is a columnist for the Chicago Tribune.

American Industry Self-Destructs

Karatsu Hajime

The economy of the United States is in serious trouble. The December 17 issue of *Business Week* last year analyzed the problems in a special report titled "Can You Compete?" "Incomes have stagnated during the past 15 years," the report notes, and though the creeping deterioration of living standards was masked during much of the 1980s—"hidden behind a tower of debt"—the impression of prosperity has now been stripped away. The fundamental problem is that "America simply isn't competitive with other nations."

Then, as if the problems were not already serious enough, the crisis in the Persian Gulf escalated into a war in January. According to one estimate, the war is costing the United States alone an estimated $500 million each day. As the fighting is still in progress as of this writing, the size of the final bill cannot be predicted. But since the payment will be falling due after a decade of the excesses of Reaganomics, clearly its effect will be to further depress the economy. Last year the federal budget deficit reached $230 billion; if it grows any larger, the prospects for the economy will be truly horrifying.

Meanwhile, the politicians in Washington continue to bide their time. With ears only for the crafty arguments devised by self-serving lobbyists, they seem oblivious to the rumblings beneath them. Convinced that the American way is the only correct way, they think they are aboard an unsinkable battleship, and they are not hesitant to increase its load. In fact, however, years of bad management and neglect have left the hull of the SS *United States* riddled with rust and barnacles. It has so many weak spots that even the increased speed needed for the gulf war could open enough leaks to sink the vessel.

Even U.S. computers head for a fall

The leaders of U.S. industry are not unaware of the problems. As the analysis in *Business Week* shows, there are some Americans who have a good idea of what has gone wrong. Basically the United States has lost its ability to make things. Their attention focused on short-term balance sheets, managers have been steering their companies into troubled waters. And as recent U.S. data reveals, management has now made another fundamental mistake. As shown in Figure 1, even the American edge in computers, a field where U.S. companies were thought to have an unassailable position, is coming to an end. In the next few years Japan will become the top supplier to the world's computer market.

Advances in semiconductor technology have been astonishing. The computing power of a medium-sized mainframe produced 15 years ago can now be packaged in a desktop personal computer. The market for mainframes has peaked, while that for personal computers and smaller models is booming. Various American companies are still in the computer race, but with their eyes on costs alone, they have cut way down on domestic production. Reckoning that offshore production

Karatsu Hajime *Born in 1919. Graduated from the University of Tokyo, where he majored in electrical engineering. Has worked for Nippon Telegraph and Telephone Public Corporation and as a technical adviser to Matsushita Electric Industrial Co. Is now a professor at Tōkai University. Author of* 1990 nen Nihon no shinario *(A Scenario for Japan in 1990),* TQC: Nihon no chie *(Total Quality Control: Japanese Wisdom at Work), and other works.*

should boost profitability, they have given much of the manufacturing work to other countries, notably Japan, South Korea, and Taiwan. But this is the road to deindustrialization, or what *Business Week* has termed "the hollowing of the corporation."

This process has now been accelerated by another development. The TV-type picture tube is giving way to thin liquid-crystal displays on compact models, such as the laptop word processor. Unfortunately for the United States, Japan produces about 90% of the world's liquid-crystal displays and has an overwhelming lead in the necessary technology. The reaction of the U.S. Department of Commerce has been to accuse Japan of dumping and slap duties on imports of these parts, but that is only hiking the costs of the American computer makers. If they end up by shifting even more production overseas, their hollowing will reach an irreversible state.

In February 1991 John Sculley, the chairman of Apple Computer, made a visit to Japan and spoke out strongly against the Commerce Department's antidumping measures. But words are inadequate to express the anger people like Sculley must feel as they see their own government undermining one of their country's leading industries.

Japanese technology in the gulf war

The gulf war has highlighted the importance of this problem. It might even been dubbed the "microchip war" because of the spectacular effectiveness of the American high-tech weapons, which incorporate large numbers of semiconductors. The success of America's Patriot missiles in stopping Iraq's Scuds from doing serious damage in Israel has been a crucial factor in keeping the war from escalating. The trouble from the U.S. point of view is that Japan has a monopoly on the supply of 92 types of chips, as the Department of Defense has acknowledged. And some of these chips are used in such key American weapons as the F-16 and F-18 fighters and the M1 tank.

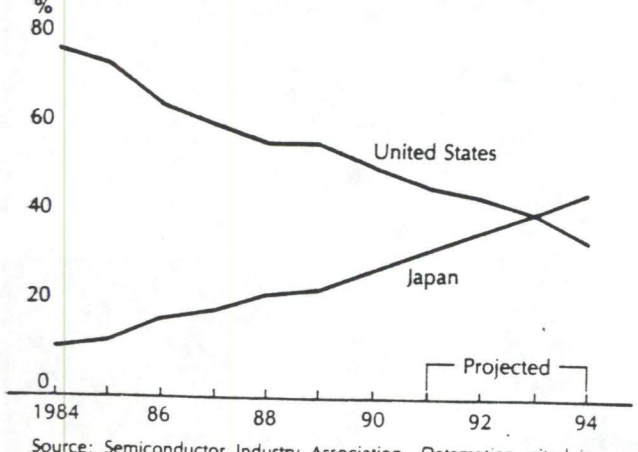
As many as 73 of these chips are gallium arsenide devices. Known for its use in such high-tech products as the phased-array radar, the gallium arsenide chip is far more difficult to manufacture than the conventional silicon semiconductor. At present Japan is the only country that produces these chips in large quantities, having acquired the necessary technology in order to make products like the compact disc player, which uses a gallium arsenide chip in its laser diode.

The pinpoint accuracy of the "smart" bombs seen in the television reports from the gulf also owes much to Japanese technology. The guidance system of these bombs makes use of a "charge-coupled device," which gained recognition from its application in Japanese video cameras. According to news reports, the Japanese electronics giant Sony has been making the "eyes" of the U.S. smart bombs ever since they first appeared at the time of the Vietnam War.

Of course, vast numbers of American-made semiconductors are also employed in high-tech weapons systems. But all the military-use chips made in the United States are protected by ceramic casings supplied by Japan's Kyocera Corp., a point recently acknowledged by the U.S. magazine *Newsweek*. Some people may think that Japan need not get so intimately involved in the American military industry, but it has no choice in the matter. The United States stopped producing ceramic packaging for chips more than 15 years ago, and the technical expertise needed for resuming production has withered away.

My point in citing these examples is to put some of the bashing Japan has been taking recently into proper perspective. Countless people in Washington have been stridently criticizing Tokyo's response to the gulf crisis, arguing that it has been slow to react and has limited its contributions to money. Quite a few Japanese have swallowed this line, and they are now warning that Japan is about to be internationally ostracized. What these people are overlooking is the fact that Japan has made the greatest technological contribution of any U.S. ally

Figure 1. Shares of the Global Computer Market



Source: Semiconductor Industry Association, *Datamation*, cited in *Business Week*, January 21, 1991, p. 57.

to the production of U.S. armaments. Without advanced Japanese technology, the war might be going quite differently. In short, technology, not money, has been Japan's main donation to the war effort. I do not suggest that Japan use this assistance as a diplomatic bargaining chip. All I really wish to do is to convince those American politicians and officials who tend to lash out at Japan at the slightest pretext to get their facts straight before opening their mouths.

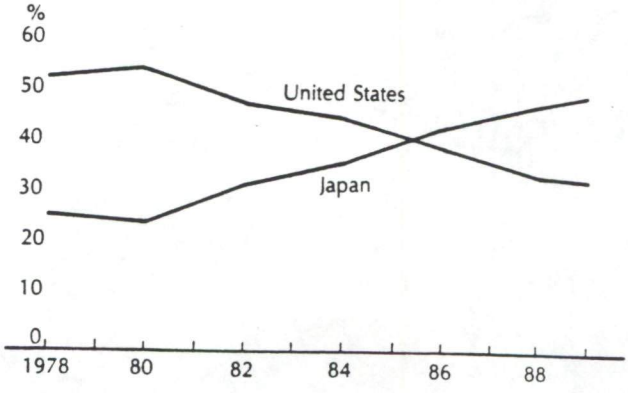
The flawed design of the chip pact

The Japan-U.S. semiconductor agreement is again in the news. Signed in 1986, the pact raised the price of Japanese chips sold abroad. When the U.S. administration decided in 1987 that Japan was still dumping chips on the American market, it slapped a 100% tariff on laptop computers and a couple of other Japanese exports. Now moves are being made to extend the pact's life.

In its effect, this agreement has been a godsend for Japan's computer makers; the manufacturers that have suffered the most from it are the computer makers in the United States. Since most of the Japanese companies, unlike their American counterparts, make their own chips, the price markups did not hurt them. Far from it, they raked in profits from the chips they sold at the inflated prices on the world market. In the United States this might have led to fat bonuses for top management, but that is not the way things work in Japan. The computer makers invested these earnings in developing new products and upgrading their facilities, making them more competitive than ever. The result, as shown in Figure 2, is that Japan's share of the world market for chips has surpassed that of the United States and now exceeds 50% of the total.

To their credit, Japan's critics appear to have learned from their mistake. They have stopped insisting that prices be propped up, instead stressing another provision of the pact: a guaranteed 20% share of the Japanese market for U.S. semiconductor makers. If this share is not attained, they say, the United States should apply further punitive measures against Japan under the "Super 301" clause of the U.S. trade legislation. The problem here is that while some Japanese manufacturers still do not procure 20% of their chips from American suppliers—a natural situation in the light of their specific requirements—others have met this target. Should such companies be punished for something that is not their fault?

Figure 2. Shares of the Global Semiconductor Market



Source: Dataquest.

Semiconductors provide but one example of how bureaucrats in Washington are sapping the vitality of American industry. Even when the U.S. government takes a well-intentioned step, moreover, American management makes selfish use of it. When Japanese automakers, forced to exercise "voluntary" restraint in their sales on the U.S. market, started hiking their prices, Detroit promptly jumped on the bandwagon, marking up its own prices, and it continued to behave in the same way when the yen's climb after 1985 made Japanese cars even more expensive. Such price gouging is a crime against U.S. consumers.

It might be tempting to assume that the U.S. automakers plowed the extra profits into improving their own competitiveness, but they did not. Detroit's managers simply divided up the cash among themselves. As Sony Chairman Morita Akio has pointed out, Chrysler Chairman Lee Iacocca increased his bonus even when his company's profits went down. Chrysler is in such bad condition today that there is talk that it may soon be sold lock, stock, and barrel to a Japanese company.

Repeating the same mistake

In this way the administrators and corporate executives of the United States have been teaming up to undermine their own manufacturing industries. Of particular note is the decision by Zenith Electronics, the last U.S. maker of color television sets, to sell off its TV production plant. Back when Japanese TV makers began full-fledged efforts to automate their production lines, introducing printed circuits and other innovations to reduce costs and

improve quality, Zenith mounted a sales campaign claiming that its television sets were better because they were handmade. When I heard that, I suspected that Zenith was doomed, and now I have been proved right. There is no future for a company with so little understanding of the importance of emerging technologies.

RCA presents an even more miserable example of American management. This is the company that virtually created today's television. Under its heroic chairman David Sarnoff, it made the first television cameras, set up the first studios, and organized NBC, the National Broadcasting Corporation. The liquid crystal displays discussed earlier were also an RCA invention. Even just the royalties from its patents brought in great riches.

After Sarnoff died, however, the company embarked on a series of financial adventures, acquiring Hertz, the car rental firm, and moving into the securities field. The core business of manufacturing was neglected, and RCA products came to be produced abroad under original-equipment-manufacturing arrangements. No doubt this increased the company's short-term profits, but it also meant that RCA's own technology went into decline. Eventually the company was sold to General Electric and split up, with key parts going to the business empire of the French electronics maker Thomson.

However unpopular I may become for speaking out, I wish to deliver a blunt message to the people in Washington who day after day lash out at Japan: U.S. industry must return to the original principles of the free market that produced America's great wealth. In the case of semiconductors, the U.S. government should concentrate on forcing American chip makers to get their act together rather than putting pressure on Japan. It should be making sure that they are capable of filling the orders from Japanese customers on time and with top-quality chips.

One after another, the United States has seen entire industries decline because of the same error. Instead of trying to make U.S. companies more competitive, the nation's leaders have swallowed the complaints and excuses of inefficient manufacturers and put pressure on foreign countries. This was the mistake that undercut the U.S. textile industry, and it has now been repeated in such industries as steel, TVs, machine tools, autos, and chips.

As I wrote in an article for the February 11 issue of the *Japan Times*, someone who gets the first in a row of buttons in the wrong hole must undo them all and start over again. Similarly, the United States must go back to the drawing board if it wants to revive its flagging industries. Virtually everything it has done thus far has backfired. The only result of the protection extended has been to weaken American industry still further. If the United States does not undo all the buttons of its economic management and start again, the days of the U.S. economy are numbered. This would be disastrous both for the United States and for the rest of the world.

Fear of flying the F-15

Unfortunately it may already be too late for a policy switch to work. Certain recent developments suggest that the decline in U.S. industry is irreversible. Once the United States loses its supremacy in computers, the aerospace industry will be about its only remaining forte. And even there the situation is far from encouraging.

Nearly all the failures in the satellites Japan has launched have turned out to be due to faulty American-made parts. This is what happened, for example, in the case of the so-called Superbird, a recent private-sector communications satellite, which suffered a series of breakdowns soon after it was brought into service and is now a useless lump of metal floating around in space. Both openly and covertly Washington has been pressuring Tokyo to buy American for its satellite needs, resisting the moves to develop entirely Japanese-made products, but businesses here have been put off by the poor American track record. Satellites that break down are not real satellites; a buy-American policy for these sophisticated devices or their parts can lead to enormous losses.

Similar problems have plagued the high-tech weapons in the gulf. Since nobody can be sure when they might malfunction, handling them can be a nerve-racking experience. Their manufacturers lack the requisite expertise in what has been called "reliability engineering." Take the case of the F-15 fighter:

Mitsubishi Heavy Industries makes F-15s for Japan under license from the United States, and I once visited its Nagoya plant to find out how the production was going. When the blueprints arrived, I was informed, the Japanese working on the project soon discovered a flaw in the design that might even have become a cause of crashes, prompting them to request a revision of the specifications from the American manufacturer. Then other mistakes were uncovered, turning the work for perfecting the blueprints into a time-consuming process. The shortcomings in the U.S. design were

so serious, in fact, that even today the pilots of Japan's Self-Defense Forces are said to be afraid of flying the F-15s made in the United States.

Might America's commercial aircraft also lose out to superior Japanese products? An American I met in mid-February expressed this very concern. When I asked why, he said that the aircraft body work Japan has been assigned in the development of the Boeing 777 is proceeding so flawlessly that insiders in Washington feel it is only a matter of time before Japan begins making the rest of the plane. And at that point the entire U.S. aerospace industry may succumb to Japanese competition.

Can it be that the Japan bashers have failed to hear warnings like this one? Surely serious Americans should be too busy putting their own house in order to worry about Japan. The problems in quality control and other fields are so critical that U.S. industry is moving down the road to self-destruction.

Bright lights in a gloomy setting

The transformation of what used to be the Soviet bloc has been truly breathtaking. In one country after another, the removal of a single plank from the framework of the one-party dictatorship has brought the entire structure tumbling down. Americans appear to have interpreted this chain of events as a victory for democracy, and yet the United States is also vulnerable to an upheaval. There is plenty of evidence to suggest that the country's economic structure could collapse like a house of cards.

The problems are not limited to the economy. A glance at recent data is sufficient to ascertain a series of frightening trends in U.S. society. Education, a basic ingredient of a competitive industry, is deteriorating. Test scores are falling, and students who are poor even at arithmetic are graduating from high schools. Additional problems, such as drug abuse and homelessness, make the malaise of American society palpable. Everything in the United States, not only its manufacturing industry, is beginning to break down.

How is America to be restored to its former glory? What contribution can Japan make toward that restoration? These are among the foremost issues I have been pondering. When I posed such questions just a few years ago, people considered me impertinent and even arrogant. Today, however, urgent action is needed. The United States is certain to sink beyond hope if it carries on as it has been doing. By the mid-1990s half the U.S. government's tax revenues will be squandered on interest payments on the relentlessly mounting national debt. Eventually only induced inflation will be able to save the United States from defaulting on its loans from abroad, and that will trigger worldwide economic chaos.

Nevertheless, I have not written the United States off completely. After all, I am aware that some U.S. companies are still the best in the business. Amid all the turmoil, they are being managed quite capably.

In the field of electronics, mention might be made of Hewlett-Packard. The chief executive officer of this company, John Young, was the chairman of the President's Commission on Industrial Competitiveness, which in 1985 made news with its hard-hitting report on American industry's lagging competitive ability. It was this report that touched off the recent round of critical analyses, such as the Massachusetts Institute of Technology's *Made in America* and the Office of Technology Assessment's *Making Things Better: Competing in Manufacturing*. In recognition of Young's outstanding contributions to trade, Japan's Ministry of International Trade and Industry has just awarded him a prize.

Japanese blood in the U.S. economy

The success of the Japanese plants in the United States is another hopeful sign. One of the most famous examples is the joint venture between Toyota Motor and General Motors known as NUMMI, or New United Motor Manufacturing, Inc., and located in Fremont, California. Originally run solely by GM, the Fremont plant had reached the end of the line, plagued by inefficiency and troubles with the United Automobile Workers Union. But with Toyota's help in management—and without firing the workers belonging to the UAW—the plant raised productivity to twice what it had been and improved quality standards to Japanese levels.

The Japanese success stories in the United States are by no means limited to automakers like Toyota, Honda, and Nissan. Before the auto industry began setting up U.S. facilities, Japanese "transplants" from the electronics industry were already in operation. As of May 1989, Japanese companies of all kinds had 1,423 factories in the United States, and for 1989 as a whole, according to the Commerce Department, they accounted for more than 10% of all U.S. exports. We should also bear in mind that a

growing number of Japanese companies are operating research and development facilities in the United States, and exports of the resulting products to Japan have now begun.

As the freest country in the world, America is constantly receiving transfusions of ideas and talent from outside. It may be trite to say that foreign blood gives the Unites States its vitality, but it is nonetheless true. Generally Americans win more than half the Nobel Prizes awarded each year, but roughly half these awards go to U.S. residents born elsewhere. Now Japanese manufacturers are also applying for U.S. citizenship, and their role in reviving U.S. manufacturing deserves proper recognition. Special mention might be made of Honda Motor's Ohio plant, which has become a success without compromising the company's production methods in the slightest.

The results of the fresh blood from Japan are becoming apparent in many sectors. The machine-tool industry, which U.S. companies abandoned one after another, is coming back to life thanks to Japanese transplants. In steel production, the biggest productivity gains are being recorded by the companies with technological and financial support from Japan. There has not yet been a comeback in TVs, nor has production of videocassette recorders taken off, but U.S. companies continue to make refrigerators and other so-called white goods, working with local Japanese partners to procure compressors and other key components.

Infusions are also taking place in computers, where Japan, followed by South Korea and Taiwan, are the up-and-coming powers in the smaller models and in such related products as printers and floppy disks. Most Japanese chip makers now have their own production lines in the United States, where they make chips in no way inferior to their Japanese output. In this connection, an episode concerning the U.S. chip maker Texas Instruments is instructive. TI set up a plant in Ibaraki Prefecture northeast of Tokyo, and the results were so outstanding that it built a carbon copy of the plant in Dallas. The American plant at first had various difficulties, but when personnel from the Japanese plant were called in, the problems were overcome. This is one more example of how Japanese help can revive a flagging operation.

A pair of Siamese twins

These examples demonstrate the importance of Japan's role in restoring the vitality of U.S. manufacturing. We must not puff ourselves up, however. The computer-aided design software used by Japanese manufacturers still comes almost exclusively from the United States. And on a recent visit to Sony's chip plant in Nagasaki, I noticed that the measuring instruments were all made by Hewlett-Packard.

As I wrote in my article for the *Japan Times*, "Japan and the U.S. are like the famed Siamese twins; separating them would endanger the lives of both." I wish the people in Washington would take this into consideration before they speak out. Japan is in a position to aid the revival of U.S. industry, and it has an obligation to offer help.

The other day Japan's ambassador in Washington, Murata Ryōhei, received an interesting letter from U.S. Commerce Secretary Robert Mosbacher. Reportedly Mosbacher asked that Professor Shiba Shōji of Tsukuba University, who achieved great success in fostering quality-control skills in Hungary, be loaned to the United States for six months or longer. This seems such a good idea that I would expand on it. I propose that Japan send a steady stream of its best people to reinvigorate the run-down industries of the United States.

A considerable number of the current leaders of Japanese industry first visited the United States as guests of its government in a generous program designed to aid the reconstruction after World War II. To return this favor, we can now send our own people to render what assistance they can, selecting them carefully to weed out mediocre personnel, and we might also invite teams of Americans to study how manufacturing industry operates here. We should promote the circulation of blood between the Siamese twins.

People today are preoccupied with the question of what should be done in the Middle East once the gulf war is over, but there is nothing Japan can do that would be as effective as the implementation of this exchange proposal. The resuscitation of U.S. manufacturing should be our foremost concern. There may be some who assume coldheartedly that nothing can be done to halt the decline of the United States, but we must at least try. If we fail, so be it. If we succeed, we also stand to benefit. I, for one, am willing to go to the United States to promote this project. (Courtesy of PHP Institute)

Translated from "Beikoku sangyō no jiko hōkai," in Voice, *April 1991, pp. 186–200; slightly abridged.*

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9200843
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

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FROM: CELESTE, Richard F.: GOVERNMENT-UNIVERSITY-INDUSTRY ROUNDTABLE

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 03/10/92

SUBJECT: HE OFFERS HIS ASSISTANCE IN FINDING A STATE OFFICIAL TO SERVE ON PCAST.

****

DIRECTORATE ASSIGNED: PCAST

STAFF ASSIGNED:

ACTION REQUIRED: FOR DAB'S SIGNATURE

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 03/31/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
D.A. Henderson

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS: NRN per ARD

OSTP RECEIVED: 03/17/92 DEPT RECEIVED:
FILE: P-PCAST

CENTRAL FILES:

0843 A

GOVERNMENT-UNIVERSITY-INDUSTRY
RESEARCH ROUNDTABLE

NATIONAL ACADEMY OF SCIENCES
NATIONAL ACADEMY OF ENGINEERING
INSTITUTE OF MEDICINE
2101 Constitution Ave., NW Washington, DC 20418

(202) 334-3486

RECEIVED
92 MAR 17 AM : 34
OSTP
MAIL ROOM

10 March 1992

D. Allan Bromley
President's Science Advisor
Director, Office of Science
and Technology Policy
Executive Office of the President
Old Executive Office Building
Washington, DC 20506

Dear Allan,

I want to thank you for taking the time to meet with me to talk about the Roundtable's efforts in promoting federal-state cooperation. I am eager to encourage that cooperation and to see that the Roundtable paper, **Federal-State Cooperation in Science and Technology Programs**, is used as a tool for promoting joint programs.

As we discussed, the lack of a focal point for federal and state policy officials to interact clearly reduces opportunities for program cooperation. Your notion of establishing a forum for exchange of ideas and information is a good one. We hope this exchange would provide ideas for inventing an organizational arrangement to serve as the policy focal point.

I will work with Roundtable staff to identify key representative state officials. With D.A. Henderson we can identify appropriate officials from federal agencies. I am hopeful that the creation of such a forum which will use the Roundtable paper, as well as additional ideas that emerge from their deliberations, will foster cooperation at both policy and program levels.

I will be discussing these and the other issues we talked about at the Roundtable Council meeting this week. I will keep you informed about how we proceed, and hope you will be able to attend the next meeting of the Council on June 25-26. In the meantime, if you want to pursue your idea of placing a state official on PCAST, I would be happy to assist you in finding an appropriate individual.

Sincerely,

Dick

Richard F. Celeste
Chairman

cc: D.A. Henderson

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9200542
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

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FROM: BUCHBAUM, Sol: PCAST

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 02/10/92

SUBJECT: HE IS FORWARDING A COPY OF HIS MEMO REGARDING THE REPORT OF THE PCAST PANEL ON SCIENCE AND TECHNOLOGY AND NATIONAL SECURITY.

****

DIRECTORATE ASSIGNED: STAFF ASSIGNED:

ACTION REQUIRED: STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
PCAST
Vickie Sutton
NATIONAL SECURITY

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 02/20/92 DEPT RECEIVED:
FILE: PCAST

CENTRAL FILES:

0542 I

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20500

RECEIVED
92 FEB 20 P2:11
OSTP
MAIL ROOM

February 10, 1992

TO: Members of the PCAST Panel on Science and Technology and National Security

FROM: Sol Buchsbaum

I am very pleased to tell you that at its meeting on Thursday, February 6, 1992, the PCAST has accepted our report. Our job is done.

Johnny and I thank each of you for a truly fine effort. Because of it, we have an excellent report which, I dare say, will be influential. Until the report is formally released, please treat it as close-hold and share it with no one.

Copy to
Charles M. Herzfeld

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9200460
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

****

FROM: GAI, Moshe: YALE UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 02/05/92

SUBJECT: HE IS WRITING TO INFORM DR. BROMLEY OF THE 16N RESULTS.

****

DIRECTORATE ASSIGNED: STAFF ASSIGNED:

ACTION REQUIRED: STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
PHYSICAL SCIENCES

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WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 02/14/92 DEPT RECEIVED:
FILE: P-PHYSICAL SCIENCES

CENTRAL FILES:

0460 I

YALE UNIVERSITY
A. W. WRIGHT NUCLEAR STRUCTURE LABORATORY
P.O. Box 6666, 272 Whitney Avenue, New Haven, Connecticut 06511

RECEIVED
92 FEB 12 P12:36

February 5, 1992

OSTP
MAIL ROOM

Professor D. Allan Bromley
Executive Office of the President
Office of Science & Technology Policy
Old Executive Office Building - Rm. 360
17th & Pennsylvania Avenue, N.W.
Washington, D.C. 20506

Dear Allan,

Thank you for your letter of January 27th. I am impressed that you found time to resolve the issue of IUPAP sponsorship for "Baryons '92" and thank you for your comments on our recent data on alpha-emission of ^{16}N.

As you showed interest in the ^{16}N results, I thought I ought to let you know of two recent incidents. Firstly, as you probably know the experiment that Zhiping and I are attempting, was proposed in the 1960's by Willie Fowler. It was later developed with complete theoretical calculations by Barker and recently by Koonin. As you know Willie is not well these days, but he made a point of coming to Zhiping's job interview talk at Caltech. He brought with him his old friends Hans Bethe and Gerry Brown. Together with the rest of the people at Caltech it made quite a gathering. Willie Fowler told Zhiping that he is happy that this experiment is finally getting done after some thirty years. In fact we are now able to close a three decade old chapter of Nuclear Astrophysics, helium burning in (massive) stars.

Last Friday I talked to Eric Adelberger and he told me that after he saw my preliminary data on ^{16}N, he thought that he ought to do the very same experiment at Seattle. My first reaction was: Why? After all it is already done! After a thought, I told Eric that a competition from him will be welcomed. After some lengthy discussion, I thought Eric could improve our experiment. In Eric's mass 8 setup he can study the correlation between the alpha-particle and recoil carbon. This will allow for extracting the partial waves that contribute to the alpha-decay. We did not plan to study this correlation at Yale with the current setup, as it is a further complication in the experiment. As it happened Eric Adelberger already has two post docs and can not justify a third one. He suggested that he will invite Zhiping to Seattle and try to convince his colleagues that this experiment is very important and Zhiping could be hired as a sort of "target of opportunity post doc" to continue the phase two experiment on the delayed-alpha emission of ^{16}N.

Best Regards,

Moshe Gai

Moshe Gai

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9200467
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

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FROM: LIKINS, Peter: LEHIGH UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 02/04/92

SUBJECT: HE IS FORWARDING A COPY OF HIS INVITATION TO PRESIDENT BUSH TO DELIVER THE COMMENCEMENT ADDRESS AT LEHIGH UNIVERSITY.

****

DIRECTORATE ASSIGNED:

STAFF ASSIGNED:

ACTION REQUIRED:

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
PCAST

****

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 02/12/92 DEPT RECEIVED:

FILE: P-PCAST

CENTRAL FILES:

0467 I

Lehigh University

Peter Likins, President

Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155
fax (215) 868-6560
(215) 691-5420

RECEIVED
92 FEB 12 P12:34
OSTP
MAIL ROOM

February 4, 1992

The Honorable George Bush
President of the United States
The White House
1600 Pennsylvania Avenue
Washington, DC 20500

Dear Mr. President,

Stimulated by Dexter Baker's assessment of your commitment to entrepreneurship and industrial innovation as a national strategy for economic recovery, I write to renew the invitation of the Lehigh University Senior Class and Board of Trustees (including Mr. Baker) to deliver the commencement address on 31 May 1992.

Pennsylvania is shaping up as a key state in the forthcoming election, and the Lehigh Valley is a critical region of the Commonwealth (with a Democratic majority electorate, Republican Congressman Don Ritter, and in our town of Bethlehem a Republican Mayor Ken Smith.)

For your commencement address we would shift the ceremonies from our 6,000 seat Stabler Arena to our new 15,400 seat Goodman Stadium, and open up our guest list to accommodate the community. (Stabler Arena would become our back-up in case of inclement weather.)

In many ways Lehigh University is an ideal setting for a positive speech about the potential of the U.S. economy. Our faculty has a long tradition of working with industry, and in more recent years we have been leaders in the development of university-industry-government partnerships, and in such collaboration lies the future of our knowledge based economy.

We are deeply involved in economic development through our Ben Franklin Partnership Advanced Technology Center (established by the Thornburgh administration), the Manufacturers' Resource Center (established by the Casey administration), and the Small Business Development Center (operated by the Musser Center for Entrepreneurship.)

We develop policies for enhancing our nation's industrial competitiveness in the global economy through the work of the Iacocca Institute in two principal areas: manufacturing and

workforce education. (1) Our manufacturing team from the Iacocca Institute led an industry group in the development of the concept of agile manufacturing on a DoD contract, and another faculty group associated with our NSF Engineering Research Center for the Advanced Technology of Large Structural Systems (ATLSS) is working with the Navy Mantech Program on shipbuilding technology. (2) In the area of workforce education, we participate in Ed Donley's Lehigh Valley Business-Education Partnership, and we operate the National Center for Partnership Development for Cities In Schools, the network of community programs for drop-out prevention that both you and your wife have kindly assisted in the past.

Finally, and perhaps most importantly, I can guarantee an enthusiastic reception from the Lehigh community. Although every university campus must welcome a diversity of views, and Lehigh people of all persuasions can be found, the basic inclinations of the campus community are overwhelmingly conservative. A year ago flags and yellow ribbons festooned the campus, and I would expect plenty of red, white and blue to be found at your commencement if you join us in May.

I realize from our occasional conversations at PCAST meetings that you have some impressions of Lehigh University, but you may wish to consult with Allan Bromley or Dick Thornburgh to enrich that perspective. I believe that Dexter Baker will be talking to Bob Mosbacher on our behalf, and that consultation may also illuminate our potential.

All of us at Lehigh are waiting hopefully for your response. With President Havel in October and President Bush in May, this would be a mighty fine year for Lehigh.

Sincerely,

Peter Likins

PL/lg

cc: Dexter Baker
Ed Donley
Allan Bromley

THE WHITE HOUSE

WASHINGTON

February 26, 1992

Dear Peter:

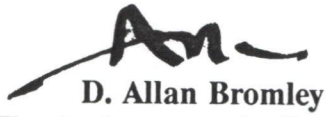
Many thanks for sending me a copy of your letter to George Bush inviting him to participate in your commencement on May 31 of this year. I shall be happy to do what I can to make sure that this year he accepts, but I should warn you that, given the political situation, he anticipates spending a very large fraction of his time away from Washington and it will be difficult to get any specific item onto his agenda.

In any event, the schedule for the President is not fixed until, at most, a few weeks prior to the event in question and so what I would urge you to do is to keep following up your letter of February 4 on about a monthly basis to make sure that it stays in the active file. I will put in a memo as well.

I look forward to seeing you at the next PCAST meeting if not before, I think we are making good progress in getting the health of the college and universities study underway and we had a very good meeting with Harold Shapiro on that topic.

With all best wishes,

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Professor Peter Likins
President
Lehigh University
Alumni Building No. 27
Bethleham, Pennsylvania 18015

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FROM: MURRIN, Thomas J.: DUQUESNE UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 01/31/92

SUBJECT: HE IS FORWARDING A COPY OF HIS FAREWELL LETTER TO TOM WELCH.

****

DIRECTORATE ASSIGNED: STAFF ASSIGNED:

ACTION REQUIRED: STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
PCAST

****

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OFFICE OF THOMAS J. MURRIN
DEAN OF THE A.J. PALUMBO SCHOOL OF BUSINESS ADMINISTRATION

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January 31, 1992

Mr. Thomas Welch
Executive Office of the President
Office of Science and Technology Policy
Washington, D.C. 20506

Dear Tom,

I've received your memo of January 24 ...

It has been GREAT being associated with you at PCAST! You are an extraordinarily capable gentleman! (A rare specie!)

I wish you all possible success-and-satisfaction back at DoD! I pray that they make full use of your talents!

If I can ever help in anyway, just let me know!

Good Luck!

God Bless!

Most sincerely,

Tom

Thomas J. Murrin
Dean

TJM/jp

cc: Dr. D. Allan Bromley

SMITHSONIAN INSTITUTION
Washington, D.C. 20560
U.S.A.

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01-30-92

January 30, 1992

Dr. Allan Bromley
Science Advisor to the President
The White House
358 Old Executive Office Building
Washington, DC 20506

Dear Allan:

I have been out of touch because I have been seriously slowed down by whiplash (self inflicted!), but I am concerned about producing some good products for you during the remainder of 1992.

Among the possibilities are:

1) A compelling piece on biological diversity, the need and a strategy to map the U.S. and the world biologically. This should make it a lot easier to reap all the benefits from biological diversity as well as other forms of development and avoid most of the conflicts that now occur. I would think this could resonate well with UNCED?

2) A science agenda relating to UNCED. A lot has been done on this via ASCEND 21, SCOPE etc, but what should be the U.S. agenda?

3) A food project. I continue to hear worrisome things about this, e.g., The International Rice Institute has not been able to produce a significantly more productive strain of rice for ten years. This could be a useful way to refer to the topic we worked on earlier.

I'm sure you, Nancy and others will have additional thoughts. We should talk about this before PCAST and I will happily come over to your office. I'll try and get on your calendar.

With all best wishes,

Sincerely yours,

Tom

Thomas E. Lovejoy
Assistant Secretary for
External Affairs

TEL/crd

cc: Nancy Maynard