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Folder Title:
President's Council of Advisors for Science and Technology: Education [2 of 2] [1991]

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"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9120460

FROM: LIKINS, PETER

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 02/18/91

SUBJECT: REPORT OF THE FCCSET COMMITTEE ON EDUCATION AND
HUMAN RESOURCES

ASSIGNED TO:

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

COPIES TO: D. Allan Bromley
Thomas Welch
Thomas Ratchford
Maryanne Bach

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 02/19/91

FILE: PCAST

Lehigh University



Peter Likins, President

Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155

712040
RECEIVED

91 FEB 19 P 1: 08

February 18, 1991
OFFICE OF THE
DIRECTOR

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,

In response to my assignment in preparation for the meeting of 7 March, I drafted the attached memo. If this seems appropriate, you may wish to distribute it to my colleagues in advance of our meeting.

Sincerely,

A handwritten signature, likely "Peter Likins", written in ink.

PL/lg

Attachment

Lehigh University



Peter Likins, President

*Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155*

February 18, 1991

MEMORANDUM

TO: PCAST

FROM: Peter Likins

SUBJECT: Report of the FCCSET Committee on Education
and Human Resources

Preface

The purpose of this memorandum is to facilitate discussion of the subject report at our meeting on 7 March, and to prepare for the next stage of our own work in this field.

There are so many reports about education available today that we grow weary just carrying them around. But this report is different. This report describes actions taken in constructing the President's Budget, and provides a rather comprehensive and well integrated view of the collective activities of all federal agencies in education for Science, Technology, Engineering and Mathematics (henceforth STEM in this memo).

Summary

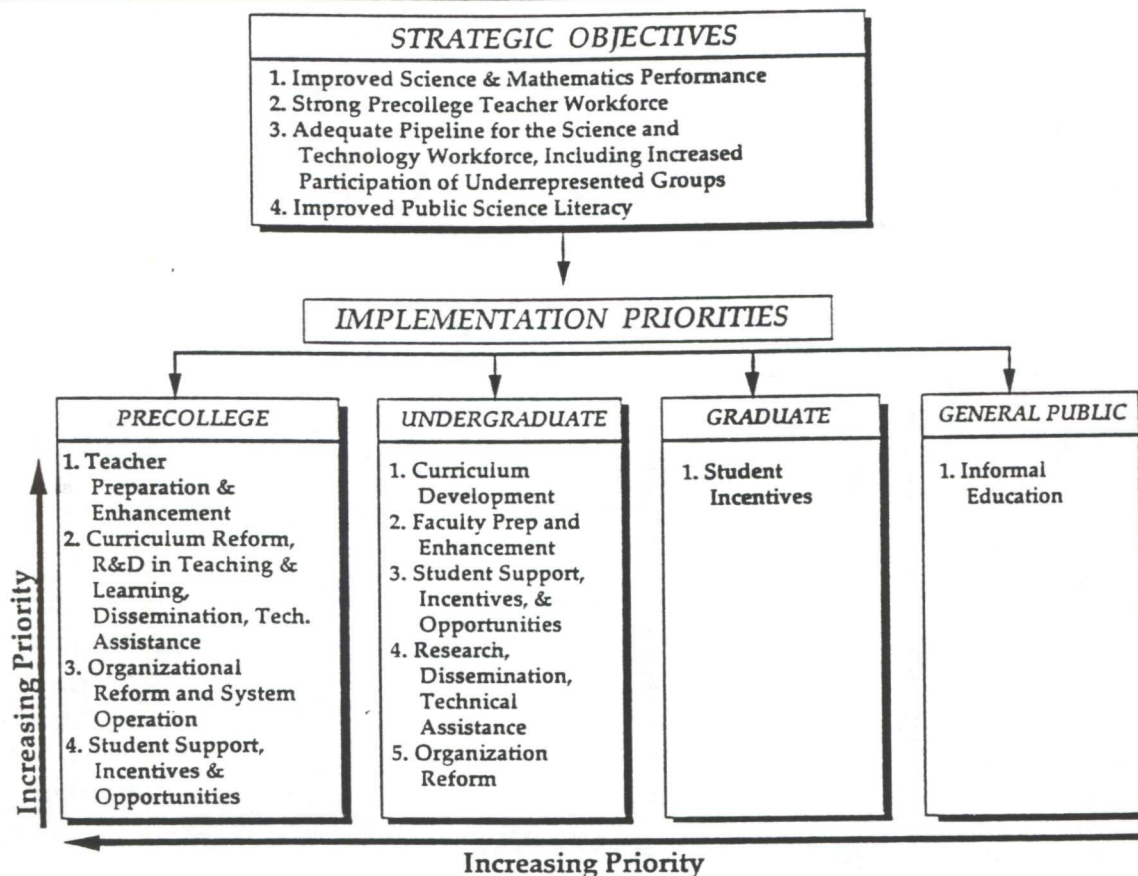
Educational priorities for the U.S. population focus firstly on our youth, and decline with age:

- | | | |
|-----|--------------------|-------------------------|
| (1) | Precollege youth | (\$660 million, up 28%) |
| (2) | Undergraduates | (\$477 million, up 14%) |
| (3) | Graduate students | (\$803 million, up 2%) |
| (4) | The general public | (not differentiated) |

(Budget numbers reported here are those defined by FCCSET's Committee as "category 1" funds, which are those which Congress appropriates expressly for STEM education. Funds supporting education generally, or supporting research with collateral benefit to education, are excluded. Percentage increases claimed by FCCSET are accepted at face value.)

Strategic Objectives and Implementation Priorities are most succinctly defined by Figure 4 of the report, reproduced below.

Figure 4
CEHR FY 1992 Strategic Objectives and Priorities



In anticipation of consideration of an appropriate role for PCAST, note the emphasis on precollege teachers, college faculty, and incentives for students to pursue an education in STEM fields to the highest level within their capacities. In the text this theme is further developed, with special reference to women and under-represented minorities.

This distribution of federal budget dollars among agencies is broken down by these priorities in Figure 8 of the report, reproduced on the following page. The FCCSET report provides a detailed description of each element in the Figure 8 matrix.

Figure 8
FY 1992 Budget Matrix

CEHR FY 1992 BUDGET BY AGENCY AND MAJOR PROGRAM AREA

MAJOR CATEGORIES	Total Request	NSF	ED	DOE	DOD	DOC	NASA	DOI	HHS	EPA	USDA
GRAND TOTAL	1940.79	456.09	329.90	74.43	415.85	7.60	67.15	41.71	513.09	13.37	21.60
Undergraduate Total	1660.62	153.05	131.80	21.65	4.97	0.55	14.10	21.96	21.77	8.07	0.70
Teacher Preparation/Enhancement	358.53	97.30	239.00	6.20	0.63	0.25	5.57	2.06	5.15	2.37	0.00
Curriculum Development*	137.27	84.75	34.80	1.90	0.00	0.09	5.60	3.60	4.52	2.01	0.00
Comprehensive/Organizational Reform	57.57	47.55	0.00	6.40	0.00	0.00	0.28	0.50	0.60	2.04	0.20
Student Incentives	47.75	11.00	0.00	5.75	4.34	0.21	0.55	14.32	10.87	0.21	0.50
Other	59.50	12.45	40.00	1.40	0.00	0.00	2.10	1.49	0.62	1.44	0.00
Undergraduate Total	672.38	132.32	16.10	30.18	176.08	1.90	25.03	8.84	70.14	4.30	12.50
Faculty Preparation/Enhancement	42.36	27.55	0.00	2.40	0.00	0.00	9.65	1.84	0.02	0.90	0.00
Curriculum Development*	123.66	63.66	6.10	11.60	38.90	0.20	1.81	1.12	0.19	0.10	0.00
Comprehensive	47.65	14.95	0.00	3.85	6.80	0.00	1.68	0.53	6.34	1.00	12.50
Student Incentives	230.27	24.81	10.00	12.33	100.50	1.70	11.73	4.30	62.59	2.30	0.00
Other	33.44	1.35	0.00	0.00	29.88	0.00	0.16	1.05	1.00	0.00	0.00
Graduate Total	1802.79	70.72	0.00	22.60	1234.80	5.15	28.02	10.92	1421.17	1.00	8.40
Predoctoral Fellowships	100.53	51.52	0.00	10.04	16.70	0.85	13.80	0.03	6.79	0.80	0.00
Predoctoral Traineeships	153.85	4.40	0.00	0.00	3.90	0.00	4.70	10.41	126.44	0.00	4.00
Postdoctoral Fellowships	100.08	9.85	0.00	10.05	10.50	3.35	9.10	0.48	52.15	0.20	4.40
Postdoctoral Traineeships	157.57	4.00	0.00	0.00	0.00	0.00	0.00	0.00	153.57	0.00	0.00
Other*	290.75	0.95	0.00	2.51	203.70	0.95	0.42	0.00	82.22	0.00	0.00

* includes program assessment and evaluation

(see p. 58 (military & civilian personnel supplement))

dollars in millions

FCCSET's Committee on Education and Human Resources proposes in the year ahead to review all federal programs in mathematics and science education and broaden the scope of the Committee's efforts to include technical training and scientific literacy issues.

The PCAST Role

When we reflect on the need to draw our most capable young people into STEM studies, and to strengthen the related capabilities of the current workforce, we are moved to ask "And who shall lead the way?" We need qualified teachers at every level to meet this challenge, and there seems to be a current shortage that threatens to grow significantly.

The FCCSET Committee has emphasized teachers, especially at the precollege level, but the budgetary priorities leave little to offer at the most advanced end of the spectrum. Perhaps PCAST should attempt a more comprehensive and integrated analysis of the STEM teaching challenge, hoping to focus priorities for the future.

A handwritten signature in dark ink, appearing to read "Peter H. Hinkle". The signature is written in a cursive style with a large, looped initial "P".

PL/lg

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

May 3, 1991

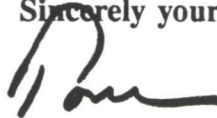
Dear Peter:

I am returning your list of proposed members for phase two of the PCAST Education Panel, having retained a copy. If you will confirm your final selections, Allan will get into the mail his letters requesting them to serve. I assume you would like to review a draft of that letter. A draft will be faxed to you shortly.

You will also find a copy of a letter I just received from Stephen Lewis, President of Carleton College. His point is an important one.

Best wishes.

Sincerely yours,



J. Thomas Ratchford
Associate Director

Dr. Peter W. Likins
President
Lehigh University
Alumni Building No. 27
Bethlehem, PA 18015

CARLETON COLLEGE
ONE NORTH COLLEGE STREET
NORTHFIELD, MINNESOTA 55057-4010

THE PRESIDENT

(507) 663-4305

April 29, 1991

Dr. J. Thomas Ratchford
Associate Director for Policy
and International Affairs
Office of Science and Technology Policy
Executive Office of the President
Washington, DC 20506

Dear Dr. Ratchford:

Thanks for spending the time with my colleagues from the Associated Colleges of the Midwest and the Great Lakes Colleges Association on Tuesday.

Let me follow up briefly on something that I mentioned in our discussion.

In a study recently done by Franklin & Marshall of the baccalaureate origins of Ph.D.s granted during the decade of the '80s, Carleton ranked first among undergraduate colleges in the total number of Ph.D.s in the four lab sciences. We were first in the earth sciences, second in physics and astronomy, third in chemistry, and third in the life sciences. No other college placed in the top 10 in all four of those natural sciences.

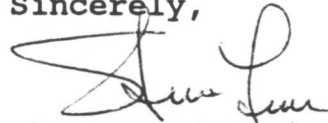
I'd just like to reiterate several of the things that I believe are critical to that kind of record. As Ed Buchwald, Chair of our Geology Department, is fond of saying, "Geology majors are made, not born." The Department knows that it must approach the introductory course in a fashion that will excite students about science and about geology. They, along with the other introductory lab sciences, treat the course as an opportunity to teach and to proselytize, not as a burden to be borne. As you know from the discussions in Project Kaleidoscope, we all feel that we have to make even more improvements in the introductory courses. But, if one's concerned about the effectiveness of resource use in teaching science, I think the record of the

Dr. J. Thomas Ratchford
Page 2
April 29, 1991

good undergraduate liberal colleges is one that needs to be studied very carefully indeed.

Again, my thanks for taking time to see us. If there's a chance you might be in our neck of the woods, we'd be delighted to welcome you to Carleton and to give you an on-the-ground introduction to what we are doing.

Sincerely,

A handwritten signature in dark ink, appearing to read "Steve Lewis", with a stylized flourish at the end.

Stephen R. Lewis, Jr.

SRL/mjj

Proposed members for PCAST Education Panel, phase 2.

Peter Likins PCAST

Charles Drake PCAST

Margaret MacVicar MIT Dean for Undergraduate Education, co-chair of
National Council on Science and Technology
Education

Paul Sally Department of Math, University of Chicago; head of U.
Chicago School Math Project

Bill Bowen President, Mellon Foundation

Bob White President, National Academy of Engineering

Lauren Resnick Co-Director, Learning Research and Development Center,
University of Pittsburgh

Julian Stanley Johns Hopkins professor (Psychology?), Director of
Math Talent Search Center

Stelanie Marshall Director, Illinois Math and Science Academy

PROPOSED MEMBERS FOR PCAST EDUCATION PANEL, PHASE 2

Dr. Margaret L. MacVicar
Dean of Undergraduate Education
Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 02139

Dr. Paul Sally
Department of Mathematics
University of Chicago
5801 South Ellis Avenue
Chicago, Illinois 60637

William G. Bowen
Office of the President
The Andrew W. Mellon Foundation
140 East 62nd Street
New York, N.Y. 10021

Dr. Lauren Resnick
Co-Director
Learning Research and Development Center
University of Pittsburgh
3939 O'Hara Street
Room 825
Pittsburgh, PA 15260

Dr. Julian Stanley
Study of Mathematically Precocious Youth
Johns Hopkins University
430 Gilman Hall
Charles & 34th Streets
Baltimore, MD 21218

Dr. Stephanie Pace Marshall
Executive Director
Illinois Mathematics and Science Academy
1500 W. Sullivan Road
Aurora, IL 60506-1039

Lehigh University*Office of the President*

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

Telecopier Information Sheet**Date:**May 9, 1991**To:**Dr. Thomas Ratchford**Telecopier Number:**(202) 395-3719**Number of Pages (Including this sheet)**2**From:**Dr. Peter Likins**Konimail 200:****(215) 868-6560 (Automatic Answer)****Telecopier Operator
Phone Number:**(215) 758-3155**Message:**

Please call the telecopier operator if you do not receive the entire telecopy.

PROPOSED MEMBERS FOR PCAST EDUCATION PANEL, PHASE 2

Dr. Margaret L. MacVicar
Dean of Undergraduate Education
Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 02139

Dr. Paul Sally
Department of Mathematics
University of Chicago
5801 South Ellis Avenue
Chicago, Illinois 60637

William G. Bowen
Office of the President
The Andrew W. Mellon Foundation
140 East 62nd Street
New York, N.Y. 10021

Dr. Lauren Resnick
Co-Director
Learning Research and Development Center
University of Pittsburgh
3939 O'Hara Street
Room 825
Pittsburgh, PA 15260

Dr. Julian Stanley
Study of Mathematically Precocious Youth
Johns Hopkins University
430 Gilman Hall
Charles & 34th Streets
Baltimore, MD 21218

Stefanie Marshall
(Have not received information as of FAXing)

May 9, 1991

Dear Dr. ^F1^:

I am pleased to invite you to provide expertise to the Panel on Megaprojects in the Sciences of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the President on issues related to national and international policy issues related to the planning, financing and organization of large scale projects in the sciences. The Panel is chaired by Council member Dr. John McTague, Vice President for Technical Affairs, Ford Motor Company. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy (OSTP) representative on the Panel.

You would provide expertise directly to the Panel Chairman. Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits the government to pay your per diem and travel expenses.

I hope you will consider providing expertise to the Panel. If so, please contact John McTague at (313) 322-7105. He will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,

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

John McT has
agreed to this
letter.

Jane B

~~Herzog, J. B. No~~
see

Proposed members for PCAST Education Panel, phase 2.

Peter Likins ✓ PCAST

Charles Drake ✓ PCAST

Margaret MacVicar MIT Dean for Undergraduate Education, co-chair of
National Council on Science and Technology
Education

Paul Sally Department of Math, University of Chicago; head of U.
Chicago School Math Project

Bill Bowen President, Mellon Foundation

Bob White ✓ President, National Academy of Engineering

Lauren Resnick Co-Director, Learning Research and Development Center,
University of Pittsburgh

Julian Stanley Johns Hopkins professor (Psychology?), Director of
Math Talent Search Center

Stephanie Marshall Director, Illinois Math and Science Academy

THE WHITE HOUSE
WASHINGTON

May 30, 1991

Dear Dr. Stanley:

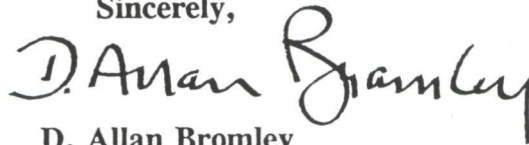
I am pleased to invite you to present to the Panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the President on issues related to education and human resources in the fields of science, technology, engineering, and mathematics. The Panel is chaired by Council members Dr. Peter Likins, President, Lehigh University and Dr. Charles Drake, Albert Bradley Professor of Earth Sciences and Professor of Geology, Dartmouth College. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy (OSTP) representative on the Panel.

Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits us to pay your per diem and travel expenses at a government determined rate.

I hope you will find the time to assist us in this important activity. If so, please let Peter know at your earliest convenience by calling (215) 758-3155. He will elaborate on what the Panel hopes to accomplish and how it will function.

Sincerely,



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

Julian Stanley
Professor
Study of Mathematically Precocious Youth
Johns Hopkins University
430 Gilman Hall
Charles & 34th Streets
Baltimore, MD 21218

THE WHITE HOUSE
WASHINGTON

May 30, 1991

Dear Dr. Resnick:

I am pleased to invite you to present to the Panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the President on issues related to education and human resources in the fields of science, technology, engineering, and mathematics. The Panel is chaired by Council members Dr. Peter Likins, President, Lehigh University and Dr. Charles Drake, Albert Bradley Professor of Earth Sciences and Professor of Geology, Dartmouth College. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy (OSTP) representative on the Panel.

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I hope you will find the time to assist us in this important activity. If so, please let Peter know at your earliest convenience by calling (215) 758-3155. He will elaborate on what the Panel hopes to accomplish and how it will function.

Sincerely,

A handwritten signature in black ink that reads "D. Allan Bromley". The signature is written in a cursive, flowing style.

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

Lauren Resnick
Co-Director
Learning Research and Development Center
University of Pittsburgh
3939 O'Hara Street
Room 825
Pittsburgh, PA 15260

THE WHITE HOUSE
WASHINGTON

May 30, 1991

Dear Dr. Sally:

I am pleased to invite you to present to the Panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the President on issues related to education and human resources in the fields of science, technology, engineering, and mathematics. The Panel is chaired by Council members Dr. Peter Likins, President, Lehigh University and Dr. Charles Drake, Albert Bradley Professor of Earth Sciences and Professor of Geology, Dartmouth College. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy (OSTP) representative on the Panel.

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Sincerely,

A handwritten signature in black ink that reads "D. Allan Bromley". The signature is fluid and cursive, with the first name "D." and last name "Bromley" clearly legible.

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

Paul Sally
Professor
Department of Mathematics
University of Chicago
5801 South Ellis Avenue
Chicago, IL 60637

THE WHITE HOUSE
WASHINGTON

May 30, 1991

Dear Dr. Marshall:

I am pleased to invite you to present to the Panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the President on issues related to education and human resources in the fields of science, technology, engineering, and mathematics. The Panel is chaired by Council members Dr. Peter Likins, President, Lehigh University and Dr. Charles Drake, Albert Bradley Professor of Earth Sciences and Professor of Geology, Dartmouth College. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy (OSTP) representative on the Panel.

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Sincerely,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley". The signature is fluid and cursive, with the first name "D. Allan" and the last name "Bromley" clearly distinguishable.

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

Stephanie Marshall
Executive Director
Illinois Mathematics and Science Academy
1500 West Sullivan Road
Aurora, IL 60606-1039

DRAFT

May 16, 1991

Dear Dr. _____ :

I am pleased to invite you to present to the Panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the President on issues related to education and human resources in the fields of science, technology, engineering, and mathematics. The Panel is chaired by Council members Dr. Peter Likins, President, Lehigh University and Dr. Charles Drake, Albert Bradley Professor of Earth Sciences and Professor of Geology, Dartmouth College. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy (OSTP) representative on the Panel.

Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits the government to pay your per diem and travel expenses.

I hope you will find the time to assist us in this important activity. If so, please let Peter know at your earliest convenience by calling (215) 758-3155. He will elaborate on what the Panel hopes to accomplish and how it will function.

Sincerely,

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

Lehigh University



Office of the President

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

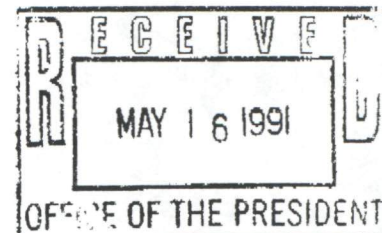
Telecopier Information SheetDate: 20 May 1991To: Dr. Tom WelchTelecopier Number: (202) 395-1575Number of Pages (Including this sheet) 2From: Peter Likins

Konimail 200: (215) 868-6560 (Automatic Answer)

Telecopier Operator
Phone Number: (215) 758-3157

Message:

Please call the telecopier operator if you do not receive the entire telecopy.

DRAFT

May 16, 1991

Dear Dr. _____:

testify before

I am pleased to invite you to ~~present~~ to the Panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the President on issues related to education and human resources in the fields of science, technology, engineering, and mathematics. The Panel is chaired by Council members Dr. Peter Likins, President, Lehigh University and Dr. Charles Drake, Albert Bradley Professor of Earth Sciences and Professor of Geology, Dartmouth College. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy (OSTP) representative on the Panel.

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Sincerely,

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

Suggest letter be directed to
Paul Sally
Lauren Resnick
Julian Stanley
Stephanie Marshall

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

July 3, 1991

MEMORANDUM FOR D. ALLAN BROMLEY

FROM: TOM RATCHFORD

SUBJECT: LIKINS' PCAST PANEL

You asked for comments on Peter Likins' June 26, 1991 letter reporting on the current status of his PCAST panel on education and human resources.

So far Peter has spoken with the four individuals identified as providing their expertise to the panel. He would like to schedule a meeting with the experts on the afternoon of August 2, following the next PCAST meeting. September 13 would be the alternative date.

ACTION: Confirm Chuck Drake's availability; work with Likins to invite experts; invite other PCAST members who are available to attend.

I suggest Arthur Sheekey, the new ED COMSCI fellow, provide the necessary staff support. Charles Dickens would provide guidance, with proper coordination with Tom Welch.

cc: J. Bond
C. Dickens
T. Welch

*Agreed
@ D.B.*

*Spoke w/ Likins July 12
He will send draft ltr 7/15 for
OSTP review before sending to
experts.
I gave him Arthur's phone no., etc.
JRL
7/15/91*

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9121944
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: LIKINS, Peter: LEHIGH UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/26/91

SUBJECT: A REPORT ON THE CURRENT STATUS OF THE MOST RECENT
PROJET OF THE PANEL ON EDUCATION AND HUMAN
RESOURCES.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED: CD, JB

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: INTERNATIONAL/POLICY
D. Allan Bromley
PCAST

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

OSTP RECEIVED: 07/01/91
DEPT RECEIVED:

FILE: PCAST*EDUCATION

Lehigh University



Peter Likins, President

912944
RECEIVED

Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155

91 JUL 1 P12:31

June 26, 1991
DIRECTOR

MEMORANDUM

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

From: Peter Likins

Subject: Education Panel Report

Anticipating our July meeting, I would like to report the current status of the most recent project of the panel on education and human resources.

I was finally successful in speaking to all four of the individuals identified as consultants to the panel: Julian Stanley of the Johns Hopkins University Study of Mathematically Precocious Youth, Stephanie Marshall of the Illinois Mathematics and Science Academy, Paul Sally of the University of Chicago Department of Mathematics, and Lauren Resnick of the Learning Research and Development Center at the University of Pittsburgh. All expressed an interest in contributing, and I look forward to a stimulating experience.

Even on the basis of telephone conversations, I could detect rather different perspectives on the subject at hand, namely the identification and early education of individuals with aptitudes and inclinations toward science, mathematics and technology. Lauren Resnick is clearly interested in strengthening the mathematical learning capabilities of all children, in the belief that unusually talented individuals will naturally rise to the top of the learning groups. Others in our group of consultants seem to focus on strategies to define particularly talented children, so as to nurture their individual development. I regret very much that the terms of our panel operations do not permit us to put all these people in the same room at the same time, but limit our consultations to sequential discussions. Nonetheless, I understand that these are the rules by which we must proceed, and I have so indicated to the four consultants contacted.

The next step, as I see it, is for me to communicate with the consultants in writing about our assignment, so that they can better prepare themselves for the upcoming consultations. I must also begin the process of scheduling their visits to

Washington, assuming that OSTP staff will handle the details of consultation scheduling. If your office is in agreement, I would like to suggest to the four consultants that we meet in D.C. on a Friday afternoon immediately after PCAST recesses, either on August 2 or September 13. Before extending this invitation I need to be sure that Chuck Drake is available on these occasions. After the consultations are scheduled, I would like to invite all members of PCAST to participate, hoping that some will be able to extend their regular participation in scheduled PCAST meetings for the purposes of the Panel on Education and Human Resources. Before I extend invitations to the consultants in accordance with this plan, I would like to be assured by PCAST staff that Chuck is available and the schedule is acceptable. We will attempt to schedule all participants on August 2 if that is possible, using the September alternative only for those consultants unable to attend the first meeting. Obviously, it would be lovely if we could all have lunch together before these consultations begin, so that we could function in literal conformity with the panel operating restrictions and at the same time derive some of the benefit of interaction with all of our consultants simultaneously.

When I am free to communicate as proposed with the consultants, I will share with them in more detail the formal charge we have adopted, and elaborate somewhat in description of my expectations of them. I do not intend to ask each consultant to submit a written paper, although each will be invited to follow the meeting with written materials as they deem appropriate. There is an abundance of written material out there for the panel to review; we need these consultants so we can derive the benefit of their personal experience in informal ways.

Please pass this along to Tom Ratchford and Tom Welch, so that we can keep our panel moving forward.



PL:ekg

P.S. As your staff knows, I have an obligation in Cleveland on the morning of 11 July, and will arrive in D.C. at some time yet to be determined. I will however be prepared to participate as scheduled in the discussion of the work of this panel in the PCAST sessions on 12 July in any event.

DAB ↑
He has been notified of the date change.
DH
7/2

—

—

—

—

DRAFT

Letters to experts testifying for PCAST Education Panel

Dear Dr.

~~I have made some progress in planning the work of the Panel on Education and Human Resources of the President's Council of Advisors on Science and Technology, and noted our plans in conversation with the President. Finally we are prepared to take the next step, which is the gathering of expert testimony. You are one of the four experts who have been asked to help us, and we look forward to your participation in our project.~~

~~Before elaborating on the substance of our inquiry, I'll tell you something further about our process. It now develops that we are permitted by the governing regulations to assemble all four of you at one place and time, so we can benefit not only from your individual perspectives but from the interactions among you.~~ My preference is to schedule our meeting in DC on Friday, 13 September from noon until 3:00 p.m., beginning with an informal lunch together. This meeting would follow immediately the September meeting of the full PCAST, so that PCAST members not on the Education Panel would have a convenient opportunity to participate if their schedules permitted. At minimum, PCAST participation would include Professor Charles Drake and myself, augmented by staff officers Thomas Ratchford and Arthur Sheekey.

Dr. Sheekey will call to determine your availability on 13 September and on 1 or 2 August or 19 September as alternate dates. On these alternate dates we could meet from 10:00 a.m. through lunch, or from lunch until 3:00 p.m., depending on scheduling constraints. We would not have the benefit of convenient participation by other PCAST members. (In view of the shortness of notice, I consider the August dates unlikely.)

Now to the substance of the matter. Among the responsibilities of PCAST is advice to the President in matters relating to education and research in science and technology. Usually that advice takes the form of informal, oral communications and brief memoranda; we have not been a source of formal reports. Last December we spoke to the President about the National Education Goals relating to science, technology, engineering and mathematics, recognizing that these are goals to be achieved by all Americans. Now we are talking to the President about the special challenges we face in developing the full potential of our people to perform at advanced levels in these fields.

At present we are focusing on children who may have the potential to contribute in adulthood as mathematicians, scientists and engineers. (In later stages of our study we will turn our attention to subsequent stages of their development in college and graduate school.) We want to know what can be done to identify and stimulate latent talent, recognizing that

- Spoke w/ Likins 7/17/91
- ① He has incorporated changes, will send out ltr
 - ② He would like first mtg to be closed
 - ③ He would like Van Cleave to address groups re rules at 1st mtg.

delete

2:30 p.m. representative

staff off. w.

capable American girls and some American minorities are most often lost as potential contributors to science and technology.

In particular, we want to know if our national objectives can best be accomplished by augmenting the educational experiences of high potential youth or by creating special academic environments for such children. If we develop school curricula and teaching strategies that meet the basic needs of all Americans in pursuing the National Education Goals, can we assume that the result will be an excellent foundation on which to build special experiences for kids with high potential in math and science? If not, what is the proper place of so-called "magnet schools" specializing in science and technology? If we can rely upon standard schools, how can we enrich the learning experiences of kids with special talents in this domain?

Do children in urban poverty need different strategies to discover and develop their talents in areas relevant to science and technology? Are there cultural obstacles to be overcome in some ethnic communities? Do talented girls need a different approach than talented boys? Are different measurement instruments required for different student populations?

We have a special interest in the influence of teachers on children with aptitudes in math and science. Is it true that elementary school teachers with "math-blocks" of their own discourage children in this area? If so, can we help those teachers? Are there national benefits to be derived by easing credentialing requirements for teachers, so qualified scientists and engineers can pursue new careers in elementary and secondary school teaching? What can we do in our colleges of education to better prepare teachers to succeed in math and science education, or in preparation for careers in science and engineering?

As you think about these questions, remember that our special responsibility is to advise the President. What can he do personally to help advance the cause? What is the proper role of the federal government?

We realize that our four expert witnesses bring different experiences to our meeting, and we don't expect all of you to have firm opinions in response to each of our questions. I'll remind you who these people are, so you can anticipate some of the differences among you (including your name below):

Dr. Stephanie Marshall
Executive Director
Illinois Math and Science Academy

Dr. Lauren Resnick
Co-Director
Learning Research and Development Center
University of Pittsburgh

Dr. Paul Sally
Professor
Department of Mathematics
University of Chicago

Dr. Julian Stanley
Professor
Study of Mathematically Precocious Youth
Johns Hopkins University

Your preparation for our meeting should be quite informal, as required for a rather spontaneous dialogue. I prefer not to receive written materials in advance of the meeting. After we have spent a few hours together, you may wish to prepare a written summary of your position in areas of your expertise that emerged as critical to our mission, just to be sure we understand your views clearly. We might decide that a second meeting is necessary, but I hope we can accomplish our objectives in one session.

If you wish to make inquiries of us before you hear from Arthur Sheekey, you will find the following phone numbers helpful:

Dr. Arthur Sheekey at PCAST ^{OSTP}	(202) 395-5101
Dr. Thomas Ratchford at PCAST ^{OSTP}	(202) 456-2894
Dr. Peter Likins at Lehigh	(215) 758-3157

I am looking forward to our meeting with keen interest.

Warm Regards,

s/Peter Likins

dw

cc:

T. Ratchford
C. Drake
D. A. Bromley



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

DATE: JULY 17, 1991

TO: PETER LIKINS
ADDRESS: Lehigh University

Telephone Number: 215-758-3155
Fax Number: 215-868-1651/00

FROM: TOM RATCHFORD

Telephone Number: 202-456-2894
Fax Number: (202) 395-3719

Number of Pages (including cover sheet): 4

SPECIAL INSTRUCTIONS: There will be a need for
a FEDERAL REGISTER notice. Arthur Sheekey will be
taking care of that along with PCAST staff.

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE)
WAS SENT

** COUNT **
4

*** SEND ***

NO	REMOTE STATION I. D.	START TIME	DURATION	#PAGES	COMMENT
1	8-2158686560	7-17-91 2:43PM	3'04"	4	

TOTAL 0:03'04" 4

XEROX TELECOPIER 7021



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

DATE: July 17, 1991

TO: PETER LIKINS
ADDRESS: Lehigh University

Telephone Number: 215-758-3155
Fax Number: 215-868-6560

FROM: TOM RATCHFORD

Telephone Number: 202-456-2894
Fax Number: (202) 395-3719

Number of Pages (including cover sheet): 4

SPECIAL INSTRUCTIONS: There will be a need for a FEDERAL REGISTER notice. ARTHUR SHEEKEY will be taking care of that along with PCAST staff.

Michelle
Jan Cleaver

Rec'd
JUL 16 1991
5:00pm

As it
possible for you
to review this
this afternoon.
Comments to Tom
Rafford's office
Thank you
Art Shockey

Lehigh University



Office of the President

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

*Tom - With deletion of one
sentence as indicated,
this is fine. (Also, I
concur in changes in
blue.)*

Telecopier Information Sheet

Date:

16 July 1991

*Recommend you show
this to Tom Welch
before it goes out.*

To:

Dr. Tom Ratchford

X2894 - Michel

Telecopier Number:

(202) 395-3719

Number of Pages (Including this sheet)

4

From:

Peter Likins

Konimail 200:

(215) 868-6560 (Automatic Answer)Telecopier Operator
Phone Number:(215) 758-3157

Message:

Attached draft letter for your approval. Please advise.

Thanks, Pete

Please call the telecopier operator if you do not receive the entire telecopy.

[47] From: Thomas J. Welch at NCMC 7/17/91 1:55PM (878 bytes: 21 ln)
To: J. Thomas Ratchford at OSTP
cc: William W. Snyder, Virginia M. Rosell at OSTP, Annie H. Barnett
Subject: Peter's Letter

----- Message Contents -----

Tom-

The letter looks good but would be better with 2 small amendments.

1. 1st para, second sentence: delete Finally
2. 2nd para, first sentence: delete this sentence [the reason is that it doesn't make sense if the second sentence is crossed out]

Thank you for the opportunity to comment.

I will ask Bill Snyder to work with Arthur Sheekey on the Federal Register notice and, if desired, the Determination to Close the meeting.

Tom

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

PCAST Panels

Problem w/closing
per Mitchell

Education -

Megaprojects,
probably

Can they be
part of PCAST
mtg, covered
by its determination?

July 29, 1991

NOTE: Tom
FROM: Art Sheekey 
RE: FYI--PCAST/ED Panel Meeting on Sept 13th

Attached are copies of drafts for:

- 1. FEDERAL REGISTER NOTICE**
- 2. STATEMENT FOR CLOSED MEETING**
- 3. DAFT LETTER TO THE 3 PANELISTS**

Due to the move at 730 Jackson and vacations of Tom Welch (last week) and this week) and Bill Snyder (this week), further progress on these is on hold. Therefore, this is just to let you know it's underway.

**cc: C.Dickens
J. Bond**

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)

PANEL ON EDUCATION AND HUMAN RESOURCES

The panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST) will meet on September 13, 1991. The meeting will begin at noon in Conference Room 476, Old Executive Office Building, 17th Street and Pennsylvania Avenue, N.W., Washington, D.C.

The purpose of the Panel is to advise the Council on matters related to education and human resources in the fields of science, technology, engineering, and mathematics, with particular focus^{us} on the enhancement of experiences and opportunities for talented and interested youth.

Proposed Agenda

- 1. The Role of the PCAST Panel on Education and Human Resources**
- 2. Presentations by expert witnesses.**
- 3. Discussion of options for exploiting nation's scientific resources in addressing the needs and capabilities of young talented students.**

This three-hour session of the PCAST Panel will be closed to the public.

The presentations and discussions of Federal policies and programs and their relationships to and impact on national, State and local science education and human strategies. The ideas shared by the expert consultants is part of an overall effort on the part PCAST explore new, alternative and more effective Federal program activities and and strategies for the President's consideration. Therefore, this meeting will be closed to the public pursuant to 5 U.S.C. 522b(c)(1), (2), and (9)(B).

Kenneth P. Yale

Chief of Staff

Office of Science and Technology Policy

BILLING CODE FY 1991

3170-01 OSTP

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)

PANEL ON SCIENCE AND TECHNOLOGY AND NATIONAL SECURITY

The Panel on Science and Technology and National Security of the President's Council of Advisors on Science and Technology (PCAST) will meet on August 5-6, 1991. The meeting will begin at 9:00 a.m. in Conference Room 476, Old Executive Office Building, 17th Street and Pennsylvania Avenue, NW, Washington, DC.

The purpose of the Panel is to advise the Council on matters involving science and technology and national security.

Proposed Agenda

1. Briefing of the Panel on problems of national security by the Office of Science and Technology Policy and the National Security Council.
2. Briefing of the Panel on problems of national security by the Department of Defense.

All sessions will be closed to the public.

The briefings on the national security issues necessarily will involve discussion of materials that are formally classified in the interest of national defense or for foreign policy reasons. The meeting will be closed to the public pursuant to 5 U.S.C. 522b(c)(1), (2), and (9)(B).


Kenneth P. Yale
Chief of Staff
Office of Science and Technology Policy

BILLING CODE FY 1991
3170-01 OSTP

July 16, 1991

DRAFT

Dear Dr. Marshall:

I was delighted to hear that you will be able to participate in the meeting arranged by Dr. Peter Likins, Chairman of the Panel on Education and Human Resources. This Panel was established recently by the President's Council of Advisors on Science and Technology (PCAST) to assist in advising the President on issues related to education and human resource in the fields of science, technology, engineering, and mathematics.

As the letter to you from Dr. Likins indicated, the initial meeting of the Panel will be a relatively small and informal session focusing on science-related activities and opportunities for highly interested and talented youth. This is one of a limited number of issues the Panel will explore with some of the nation's leading experts in the fields of teaching and research over the course of this year.

The Education Panel meeting is scheduled for Friday, September 13, 1991. Your session will convene in Room 476 in the Old Executive Office Building on 17th Street and Pennsylvania Avenue at noon. The meeting will end at 3:00 PM, and lunch will be served at the outset.

If you have any questions relating to travel or need further details of the meeting, please call Dr. Arthur D. Sheekey (202-395-3662) in my office. We will assume you will be able to make your own travel arrangements.

Sincerely,

Thomas Ratchford

copies to Stephanie Marshall, Paul Sally and Julian Stanley

DRAFT

JULY 29, 1991

**DETERMINATION TO CLOSE SEPTEMBER 13, 1991
MEETING OF THE PANEL
EDUCATION AND HUMAN RESOURCES OF THE
PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)**

The President's Council of Advisors on Science and Technology (PCAST) Panel on ^{Ed.} Science and Human Resources will meet on September 13, 1991. This meeting will be held in Conference Room 476 of the Old Executive Office Building. The Panel will start its deliberations at noon, Friday, September 13th, and will conclude its activities that same afternoon at 3:00 PM.

The subject matter of the Panel meeting on September 13, 1991 will focus on limited number of policy issues options associated with early identification of and experiences for youth who are considered highly talented and interested in science and mathematics.

Deliberations of the Panel will result in a clarification of policy research findings and advice by three to four national experts in the areas of ^{mathematics and} science education and human resource development. The PCAST Panel members and the expert witnesses will explore the range of current viable programs and strategies and their impact on the enhancement of opportunities for young, talented and high-interest students. The Panel will review both formal and informal science and mathematics education

experiences provided to youths throughout the nation, particularly programs and activities that provide enrichment experiences and opportunities for female and minority students and others currently underrepresented in critical science-related fields. Discussions during this meeting are designed to support PCAST recommendations and advice to the President on matters related to the achievement of national science and education goals.

Therefore, I have concluded that in this instance issues and topics identified by the expert panel of witnesses and advice considered by the Panel permit this brief meeting to be closed under Section 10(d) of the Federal Advisory Committee Act, Public Law 92-463, as amended, principally, 5 U.S.C. 522b.(c)(1), (2), (6), and (9)(B).

D. Allen Bromley

Director

Michelle K. Van Cleave

OSTP General Council

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

July 16, 1991

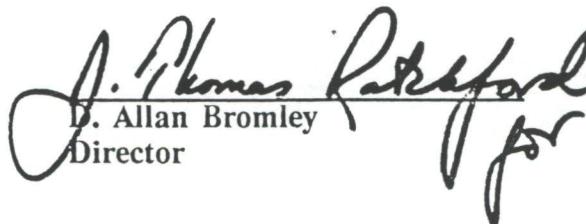
**DETERMINATION TO CLOSE
AUGUST 5-6, 1991 MEETING OF THE
PANEL ON SCIENCE AND TECHNOLOGY AND NATIONAL SECURITY
PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)**

The President's Council of Advisors on Science and Technology (PCAST) Panel on Science and Technology and National Security will meet on August 5-6, 1991. This meeting will be held in Conference Room 180 of the Old Executive Office Building. The Panel will start its deliberations at 9:00 AM, Monday, August 5, and will conclude its activities on Tuesday, August 6, at 4:00 PM.

The subject matter of the Panel is entirely or inseparably classified under formal national security classification procedures.

The deliberations of the Panel will result in findings and advice with significant national and international impact. Their disclosure would compromise classified material, and would frustrate the purpose for which the Panel was established and would significantly complicate and frustrate the implementation by Federal agencies of recommendations arising from the Panel or simply of programs by them. The important purposes, distinguished membership, and unique context of the Panel amplify greatly the effects which public disclosure of these presentations and deliberations would have.

Therefore, I have concluded that in this instance many matters to be presented to the Panel and discussed by it permit the meeting to be closed under Section 10(d) of the Federal Advisory Committee Act, Public Law 92-463, as amended, principally, 5 U.S.C. 522b.(c)(1), (2), (6), and (9)(B).


D. Allan Bromley
Director


Michelle K. Van Cleave
OSTP General Counsel

DRAFT

DETERMINATION TO CLOSE PORTIONS OF THE JULY 11-12, 1991 MEETING OF THE PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)

The President's Council of Advisors on Science and Technology (PCAST) will meet on July 11-12, 1991. This meeting will be held at the Conference Room, Council on Environmental Quality, 722 Jackson Place. The Council will start its deliberations at 9:00 AM, Thursday, July 11, and will conclude its activities on Friday 12, at 12:00 NOON.

The proposed agenda for the meeting of the President's Council of Advisors on Science and Technology is as follows:

1. Briefing of the Council on the current activities of the Office of Science and Technology Policy and the private sector.
2. Briefing of the Council on current federal plans, programs, activities and policies in science and technology.
3. Discussion of progress on working group panels.

Some of the priority business of the PCAST should be open to the public, and the background non-sensitive material should be fully available. Therefore, I have determined that the agenda should be ordered to group material together and to permit public access to that part of the meeting.

Certain activities of the PCAST and certain of the panel studies concern matters which are entirely or inseparably classified under formal national security classification procedures. Other portions of both activities relate solely to internal personnel procedures of the Executive Office of the President. The discussions of panel topic priorities necessarily involve inclusion of classified topics; and discussion of panel composition involves material which, if it were disclosed, would result in unwarranted invasion of personal privacy.

Finally, the deliberations of the PCAST on several action items and panel topics will result in findings and advice with significant national and international impact. Their premature disclosure would frustrate the purpose for which the PCAST was established and would significantly complicate and frustrate the implementation by Federal agencies of recommendations arising from the PCAST or simply of programs

by them. The important purposes, distinguished membership, and unique context of the PCAST amplify greatly the effects which public disclosure of these presentations and deliberations would have.

Therefore, I have concluded that in this instance many matters to be presented to the PCAST and discussed by it permit the meeting to be closed under Section 10(d) of the Federal Advisory Committee Act, Public Law 92-463, as amended, principally, 5 U.S.C. 552b.(c)(1), (2), (6), and (9)(B).

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

Michelle K. Van Cleave
OSTP General Counsel

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

ORIGINATOR: 02

DOCUMENT NUMBER: 9123452

STATUS C

DIRECTORATE STATUS

FROM: LIKINS, Peter: LEHIGH UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 08/07/91

SUBJECT: THE PCAST PANEL ON EDUCATION AND HUMAN RESOURCES.

DIRECTORATE
ASSIGNED: STAFF
ASSIGNED:

ACTION
REQUIRED: STAFF
ACTION:

OSTP DUE DATE: SENDER'S DUE DATE:
DATE COMPLETED: STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
PCAST
INTERNATIONAL/POLICY

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

OSTP RECEIVED: 08/12/91
DEPT RECEIVED:

FILE: P-PCAST

Lehigh University



Peter Likins, President

*Alumni Memorial Building 27
Bethlehem, Pennsylvania 18015
telephone (215) 758-3155*

RECEIVED

91 AUG 12 P 4: 34

August 7, 1991

OFFICE OF THE
DIRECTOR

MEMORANDUM

TO: D. Allan Bromley
FROM: Peter Likins
SUBJECT: Panel on Education and Human Resources

The panel will meet from noon to 3PM on 13 September, immediately following the PCAST meeting. We will receive testimony from three experts in the field:

- Dr. Julian Stanley of the Johns Hopkins University Study of Mathematically Precocious Youth
- Dr. Paul Sally of the University of Chicago Department of Mathematics
- Dr. Stephanie Marshall of the Illinois Mathematics and Science Academy.

All members of PCAST are encouraged to participate.

Our agenda calls for discussion of strategies for developing the full potential of American youth with the capacity to perform at advanced levels in science, mathematics and engineering.

We want to know what can be done to identify and stimulate latent talent, recognizing that capable American girls and some talented American minorities are most often lost as potential contributors to science and technology.

We seek also a better understanding of strategies to nurture the talents of promising youth. In particular, we have a special interest in the influence of teachers and other mentors on the development of budding young scientists, mathematicians, and engineers.

PL/lg

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

FILE
PCAST
Mts Ed
Panel

12 August, 1991

MEMORANDUM FOR DR. BROMLEY
TOM WELCH

FROM: PIERRE PERROLLE *P.P.*

SUBJECT: PCAST BRIEFING: Educational Statistics

This is to confirm your concurrence with my proposed plan to have Dr. Emerson Elliott, Acting Commissioner, National Center for Education Statistics (NCES) brief PCAST at its open session on October 10, 1991.

The main subject of Dr. Elliott's briefing will be Twenty Year Trends in the National Assessment of Educational Progress (NAEP). The trend data will have just been released on September 30.

NAEP covers four subjects (science, math, reading and writing) for four age groups (9, 13 and 17) in grades 4, 8 and 12. The survey covers the entire country and is based on a sampling of 2,600 students. The data are broken down by gender, ethnicity, and region.

Dr. Elliott will stress the math and science data. I also asked if he would touch on the work that NCES is doing on international comparisons.

Please let me know if there are other points you would like Dr. Elliott to emphasize.

cc: Tom Ratchford
Charles Dickens
Arthur Sheekey

"STAFF MEMOS"

TYPE: Information

DOCUMENT NUMBER: 9123944

FROM: SHEEKEY, ARTHUR

TO: RATCHFORD

DATE OF
CORRESPONDENCE: 09/09/91

SUBJECT: MEETING WITH TOM WELCH

FILE
PCAST
M+S Ed Panel

COPIES TO:

RESULTING ACTION:

ASSIGNED TO:

OSTP DUE DATE:

DATE COMPLETED: _____

REMARKS:

DATE RECEIVED:

FILE:

PCAST EDUCATION

September 9, 1991

NOTE

TO: TOM RATCHFORD
FROM: ARTHUR SHEEKEY
SUBJECT: MEETING WITH TOM WELCH



This morning I met with Tom Welch to go over the PCAST Education Panel meeting.

- 1. He asked for a copy of the draft I prepared in July to justify closing the panel meeting. See attachment. Tom said he just wanted to hold on to it, should he need to write up something later.**
- 2. We discussed the issue, and potential problems, of using and hearing advice from "experts" as opposed to using "consultants." The former typically provide one-time individual advice— not a consensus for actions. Consultants are used in a different capacity and will provide ongoing advice. (See attached 8/28/91 draft prepared by Tom Welch)**
- 3. Dr. Bromley will probably drop by the Ed Panel meeting.**
- 4. A full-time federal official must be present during all sessions, whether open or closed to the public.**
- 5. Minutes must be taken and kept subsequently in PCAST office.**

cc: S. Bowden

JULY 29, 1991

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)

PANEL ON EDUCATION AND HUMAN RESOURCES

The panel on Education and Human Resources of the President's Council of Advisors on Science and Technology (PCAST) will meet on September 13, 1991.

The meeting will begin at noon in Conference Room 476, Old Executive Office Building, 17th Street and Pennsylvania Avenue, N.W., Washington, D.C.

The purpose of the Panel is to advise the Council on matters related to education and human resources in the fields of science, technology, engineering, and mathematics, with particular focus on the enhancement of experiences and opportunities for talented and interested youth.

Proposed Agenda

- 1. The Role of the PCAST Panel on Education and Human Resources**
 - 2. Presentations by expert witnesses.**
 - 3. Discussion of options for exploiting nation's scientific resources in addressing the needs and capabilities of young talented students.**
-
- 4. OSTP/PCAST discussion of program planning/budget issues**

"Education and human resources" is one the six major topics scheduled for discussion at the September, 1991 meeting of PCAST Panel. With the consideration that all of these discussions are somewhat open-ended and overlapping, it is necessary to declare the panel sessions closed to the public.

Individual presentations by the science education experts will focus on effective programs and activities for talented youths. Discussions will concentrate on the Federal responsibilities and their relationships to and impact on national, State and local science education and human resource strategies. The ideas shared by the experts is part of an overall effort and responsibility of PCAST to explore new, alternative and more effective Federal policy directions, program activities and strategies for the President's consideration. Therefore, this meeting will be closed to the public pursuant to 5 U.S.C. 522b(c)(1), (2), and (9)(B).

Kenneth P. Yale

Chief of Staff

Office of Science and Technology Policy

BILLING CODE FY 1991

3170-01 OSTP

DETERMINATION TO CLOSE SEPTEMBER 13, 1991
MEETING OF THE PANEL
EDUCATION AND HUMAN RESOURCES OF THE
PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)

The President's Council of Advisors on Science and Technology (PCAST) Panel on Education and Human Resources will meet on September 13, 1991. This meeting will be held in Conference Room 476 of the Old Executive Office Building. The Panel will start its deliberations at noon, Friday, September 13th, and will conclude its activities that same afternoon at 3:00 PM.

The subject matter of the Panel meeting on September 13, 1991 will focus on a limited number of policy issues options associated with early identification of and experiences for youth who are considered highly talented and interested in science and mathematics.

Deliberations of the Panel will result in a clarification of policy research findings and advice by three to four national experts in the areas of science education and human resource development. The PCAST Panel members and the expert witnesses will explore the range of current viable programs and strategies and their impact on the enhancement of opportunities for young, talented and high-interest students. The Panel will review both formal and informal science and mathematics education experiences provided to youths throughout the nation, particularly programs and

activities that provide enrichment experiences and opportunities for female and minority students and others currently underrepresented in critical science-related fields. Discussions during this meeting are designed to support PCAST recommendations and advice to the President on matters related to the achievement of national science and education goals. The discussions could also influence program planning and budgeting proposals for Fiscal Year 1993 and beyond.

Therefore, I have concluded that in this instance issues and topics identified by the expert panel of witnesses and advice considered by the Panel permit this brief meeting to be closed under Section 10(d) of the Federal Advisory Committee Act, Public Law 92-463, as amended, principally, 5 U.S.C. 522b.(c)(1), (2), (6), and (9)(B).

D. Allen Bromley

Director

Michelle K. Van Cleave

OSTP General Council

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506
August 28, 1991

DRAFT

MEMORANDUM FOR PCAST MEMBERS

FROM: TOM WELCH, EXECUTIVE DIRECTOR AND DESIGNATED AGENCY
ETHICS OFFICIAL FOR PCAST

SUBJECT: GUIDANCE ON CONDUCTING PRESIDENT'S COUNCIL OF ADVISERS
ON SCIENCE AND TECHNOLOGY (PCAST) PANEL MEETINGS WITH
EXPERTS

The PCAST Charter gives the Chairman the authority to invite experts from the private sector to assist the PCAST in its deliberations. Accordingly, Dr. Bromley has decided that each of the PCAST Panels may invite experts to advise them on the issues they have under study.

Experts are not members of the PCAST; they should participate as individuals only and not as Panel members. Discussion and exchange is certainly appropriate, but Panel Chairmen should refrain from attempting to reach a consensus among the experts. Indeed, it is hoped that the experts coming before the Panel will present a range of opinion for the PCAST to consider.

The recommendations that may issue from the Panels will be solely the responsibility of the PCAST members, reflecting the judgment and best advice of the PCAST informed by expert opinion.

Each expert appearing before a PCAST Panel should make available a copy of his or her biography for the Panel members, which will become a part of the permanent record of the PCAST.

Panel Chairmen are reminded that meetings of PCAST Panels convened for the purpose of receiving expert presentations are subject to all Federal Advisory Committee Act (FACA) provisions, including the requirements that meetings be open to the public and meeting notices published in the Federal Register. Panel Chairmen should call upon me for assistance with FACA and other administrative matters that may be of concern to their Panel.

If a PCAST Panel Chairman finds it necessary to ask experts or other individuals to participate in reaching consensus, the Panel Chairman should so inform the Dr. Bromley. If the Dr. Bromley concurs, actions will be taken to bring these individuals on as consultants to the Office of Science and Technology Policy.

cc: Associate Directors
Michelle Van Cleave
Ken Yale

Executive Office of the President
CONFERENCE ROOM RESERVATION REQUEST

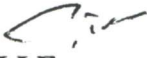
NAME OF INDIVIDUAL HOSTING/ATTENDING EVENT: J. Thomas RATCHFORD (Ginny Rosell)		EXTENSION: 7396	
OFFICE/AGENCY: OSTP		DATE OF MEETING: 9/16/91	
STAFF PERSON RESPONSIBLE FOR CLEARANCE: Ginny Rosell		HOURS: From: 9 ³⁰ To: 3 ³⁰	
TYPE OF EVENT: ☒ Meeting ☐ Reception Other _____		Official: ☒	Private: ☐
PURPOSE OF MEETING: President's Council of Advisors on Science & Technology Education Panel			
NUMBER OF ATTENDEES: 15		IN ATTENDANCE: ☐ President ☐ First Lady ☐ Vice President	
ROOM(S) REQUESTED: ☐ 22 OEOB ☐ 274 OEOB ☐ 450 OEOB ☐ 474 OEOB ☒ 476 OEOB ☐ Roosevelt Room West Wing Other _____			
GSA REQUIREMENTS: ☒ NO ☐ YES (fill out TYPE OF SERVICE below)			
TYPE OF SERVICE: ☐ Elevator Service ☐ #4 ☐ #6 ☐ #7 Time Reserved _____ Floors Reserved _____ ☐ Podium ☐ Coat Rack ☐ Flags SPECIAL ROOM ARRANGEMENTS (Rooms 22 and 474 OEOB Only) ☐ Theatre: Number of Chairs _____ ☐ Reception: Number of Table(s) _____ 6ft _____ 8ft _____ 10ft ☐ Other _____			
WHITE HOUSE STAFF MESS REQUIRED: ☒ NO ☐ YES Estimated Cost \$ _____ Funding to be Provided by: _____ Counsel's Approval: _____			
REMARKS:			
OFFICIAL USE ONLY			
DATE OF REQUEST:		APPROVED BY:	

RETURN TO: White House Administrative Office
Room 1, OEOB

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

October 1, 1991

MEMORANDUM FOR TOM WELCH

FROM: PIERRE PERROLLE 
SUBJECT: Comments on Ash Carter Paper

I have one comment on what is otherwise an excellent draft. It pertains to Item 4, "Attracting technically qualified people..."

The definition of "technically qualified people" should be broadened to include language and area specialists.

I can speak from personal experience, as a product of the old National Defense Foreign Language (NDFL) program which paid for my fluency in the Chinese language and my Ph.D. concentration in Chinese Studies.

The U.S. Government had no immediate need for me or my peers at the time I was in graduate school. But within five years, we were ready to serve on the diplomatic front lines as relations with China were established. In my years of public service, including my tour as Science and Technology Counselor in Beijing, the Government recouped its far-sighted NDFL investment many times over.

The military success of Desert Storm has taught us that we have been following the right technological course. Whether we have achieved victory in a non-military sense, however, is still an open question. For the future, that dimension rests in part on whether we have the human resources with the language and area skills that meet our intelligence and diplomatic needs.

I hope the Panel finds merit in my suggestion. I would be happy to discuss it further with any of its members. Phone: 202/395-4764. FAX: 202/395-3719.

cc: Allan Bromley
Tom Ratchford
Charles Herzfeld

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

December 3, 1991

MEMORANDUM FOR VICKIE SUTTON

TOM WELCH
CHARLES DICKENS

FROM:

TOM RATCHFORD

SUBJECT:

MATH AND SCIENCE EDUCATION
ACTIVITIES

The attached memorandum from Arthur Sheekey proposes OSTP Math and Science Education initiatives that would involve both PCAST and CEHR. What are your reactions to: (a) the general idea; and (b) the specific proposals?

Attachment

November 22, 1991

MEMORANDUM FOR TOM RATCHFORD

FROM: ARTHUR SHEEKEY 

SUBJECT: FY 1994: A PROCESS FOR DEVELOPING CONSENSUS

Before I distance myself from the conversations and data on the quality of mathematics and science teaching, and from OSTP and CEHR, I would like to suggest a strategy for elevating and addressing key policy issues for the upcoming year. This proposed strategy is designed to improve the articulation of federal science and education reform efforts. Elements of the strategy would include the following: a series of CEHR forums chaired by a PCAST member; periodic teleconferences between the Science Advisor and science/educators; and a team of science specialists, drawn from the relevant agencies, who would prepare a brief document; the narrative justification for budget and legislative proposals for FY 1994. The effort would aim to raise the visibility of the Science Advisor and PCAST as leaders in science education reform efforts. Forums would also assist in reducing the role of CEHR in the review of internally generated documents.

The forums would be structured to petition comments on the Federal Role in Science Education: (1) in research and development, (2) in the dissemination of information and materials; and (3) in support activities.

Process: As a process somewhat analogous to NIH's Consensus Panels (small groups of informed individuals meeting over a concentrated period), the suggested planning process begins with a panel of experts, or "PCAST advisors," who identify rather specific set of science education priorities for Federal attention. The panel, consisting of three or four members of associations and an equal number of scientists, would meet two or more times over a four-week period and focus on an overall theme or question raised at the outset, e.g., "improving math and science achievement at grades 4, 8, and 12, what is needed, and how can needed resources and services be delivered," or "motivating children with science and technology." Within this context, forums would identify critical activities for Federal support in the three categories above.

The PCAST Chairman could convene the panel before the end of February, with a deadline for forum topics and agendas completed by mid-March. During May and June, ("President's or PCAST) forums would address the topics. Consensus (on problems) and options (for solution strategies) papers would be prepared under the direction of CEHR

and OSTP. The process culminates with: (1) a PCAST\CEHR review of policy options; (2) a PCAST/CEHR Chairman meeting with the President and his advisors prior to the preparation of the FY 1994 budget and legislative proposals; and (3) a PCAST/OSTP/CEHR press conference announcing the initiative in mid-February, after the State of the Union Address.

If the Science Advisor were willing to make a number of teleconference presentations, I don't imagine it would have to tap OSTP's budget. With modest production facilities, e.g., at the Chamber of Commerce, PBS, or other, the Science Advisor could address state science coordinators, scientists, or education convention groups. The idea is that he could raise the level of debate, and create a dialogue with various groups at remote sites without leaving downtown D.C.

Among issues for FY 1994: During the past several weeks, I came across several different perspectives on "problems and solutions." On the quality of teaching, some individuals have the point of view that the number of good science and math teachers can be increased by encouraging more science and math majors to enter teaching, with the expectation that most will remain in this career. Myron Atkin of Stanford kept talking about the "centrality of the teacher. While others, such as Al Buccino, thought the concept of a "fully-qualified" science teacher for all students was no longer valid, in light of new technologies, interdisciplinary subject preparation, and the diversification of schools into magnets, etc. Unfortunately, the 100 thousand education degree graduates are, almost by definition, "generalists." Specialists will continue to work outside school settings. On the issue of instructional and information technologies, there are those who focus on NREN, while others play this down for serving institutions other than research universities in the next several years; others view more practical opportunities originating from cable television and telephone companies, or from direct broadcast satellites.

Based on my discussions with several "informed experts," I became convinced the serious problems associated with quality of science education begin at the elementary school level, with teachers who have poor backgrounds in math and science. Without minimizing high school teaching inadequacies, studies reveal that two-thirds of the high school science teachers are qualified, either by training or long experience. There is also evidence that the summer institute "non-applicants and rejected" teachers are the least qualified. These facts argue for the development of supplemental materials, interactive video programs, and itinerant specialists, a "science corps," at least for the elementary school levels.

Beyond the issues of teaching, content and technology, organizational and governance issues could be addressed within a comprehensive initiative. Among these are those relating to "state" or regional academies, or other precollege programs for high ability students. The next round of OERI legislation, this spring, will discuss the merits of "education extension agents," something the Congress seems to like. Some preparation might be done to explore the role of such technical experts in science and mathematics, particularly for rural and inner-city schools where the biggest needs seem to exist. A new and different OERI could be part of the 1994 proposal.

Proposed members for PCAST Education Panel, phase 2.

Peter Likins PCAST

Charles Drake PCAST

Margaret MacVicar MIT Dean for Undergraduate Education, co-chair of
National Council on Science and Technology
Education

Paul Sally Department of Math, University of Chicago; head of U.
Chicago School Math Project

Bill Bowen President, Mellon Foundation

Bob White President, National Academy of Engineering

Lauren Resnick Co-Director, Learning Research and Development Center,
University of Pittsburgh

Julian Stanley Johns Hopkins professor (Psychology?), Director of
Math Talent Search Center

Stelanie Marshall Director, Illinois Math and Science Academy