

Originally Processed With FOIA(s):
2005-0336-F

FOIA Number:
2005-0336-F

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the George Bush Presidential
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Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Education Files

OA/ID Number: 62031
Folder ID Number: 62031-003

Folder Title:
Education: General (1) [3 of 4] [1991]

Stack:

Row:

Section:

Shelf:

Position:

0

0

0

0

Briny -

Please clear from
system and file under
"unanswered correspondence"

JS
10/23/91

Document Originally
Attached to
Following Page

"Document Control"



TYPE: ACTION
ORIGINATOR: 02

STATUS I

DOCUMENT NUMBER: 9124392
DIRECTORATE STATUS

FROM: AL-ZUBAIDI

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/10/91

SUBJECT: LETTER REQUESTING ASSISTANCE WITH HIS LAWSUIT
CONCERNING HIS DISMISSAL FROM THE Ph.D. PROGRAM AT
VIRGINIA POLYTECHNIC INSTITUTE.

DIRECTORATE
ASSIGNED: INTERNATIONAL/POLICY

STAFF
ASSIGNED:

ACTION
REQUIRED: AS APPROPRIATE

STAFF
ACTION:

OSTP DUE DATE: 10/22/91
DATE COMPLETED: SENDER'S DUE DATE:
STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
NATIONAL SECURITY
LIFE SCIENCES

WHITE HOUSE TRACKING #:

CONTACT PERSON:
PHONE:

EXT:

REMARKS:

CLOSED

*Michelle
please examine
DAB*

OSTP RECEIVED: 10/15/91
FILE: P-EDUCATION

DEPT RECEIVED:

*10/22/91 DAB - I recommend no response.
He's in the midst of grievance
procedure (possible future lawsuit?),
out of which we should stay.
- M*

Pierre -
Have you reviewed?

JZ
10/22/91

Unbelievable soap opera. Who's got
the TV rights? Is this normal within
the Virginia Physics Community? JZ

Document Originally
Attached to
Following Page

Pierre,

FVT return.

10/17/91
JZ

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9124392
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: AL-ZUBAIDI

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/10/91

SUBJECT: LETTER REQUESTING ASSISTANCE WITH HIS LAWSUIT
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DIRECTORATE STAFF
ASSIGNED: INTERNATIONAL/POLICY ASSIGNED:

ACTION STAFF
REQUIRED: AS APPROPRIATE ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 10/22/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
NATIONAL SECURITY
LIFE SCIENCES

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

OSTP RECEIVED: 10/15/91 DEPT RECEIVED:
FILE: P-EDUCATION

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Letter	To: Allan Bromley From: Amer Al-Zubaidi Re: Summary Statement to grievance report [personal information redacted] (1 pp.)	10/10/91	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Education Files
WHORM Cat.:
File Location: Education: General (1) [3 of 4] [1991]

Date Closed:	3/8/2010	OA/ID Number:	62031-003
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or
financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President
and his advisors, or between such advisors [(a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of
personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of
gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an
agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial
information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of
personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement
purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of
financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01b. Report	Brief Report of Amer Aziz Al-Zubaidi [personal information redacted] (30 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Education Files
WHORM Cat.:
File Location: Education: General (1) [3 of 4] [1991]

Date Closed:	3/8/2010	OA/ID Number:	62031-003
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
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AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
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C. Closed in accordance with restrictions contained in donor's deed of gift.

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(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9124418
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: LIKINS, Peter: LEHIGH UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/08/91

SUBJECT: A COPY OF A LETTER TO KATHERINE SUPER REGARDING A
VISIT BY PRESIDENT BUSH TO LEHIGH UNIVERSITY.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

COPIES TO: D. Allan Bromley

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

OSTP RECEIVED: 10/16/91 DEPT RECEIVED:
FILE: P-EDUCATION

Lehigh University



Peter Likins, President

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

October 8, 1991

Ms. Katherine L. Super
Deputy Assistant to the President
for Appointments and Scheduling
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

OFFICE OF THE
DIRECTOR

91 OCT 16 A 8:39

RECEIVED

Dear Ms. Super:

Our previous correspondence concluded with a letter from you dated 5 August 1991, deferring judgment regarding the prospect of a visit by the President to Bethlehem during President Václav Havel's participation here in our celebration of his commitment to higher education in Czechoslovakia. At the time of our communication there was no specific date set for President Havel's visit to the Lehigh University campus, since President Havel's people were still negotiating with our government for the specific itinerary that matched the interests of both presidents.

As the schedule has unfolded, we expect to welcome President Havel to the City of Bethlehem and the Lehigh University campus on 26 October 1991, for a full days festivities concluding in his honorary degree award and public lecture on Saturday night. I understand, of course, that President Bush will not be involved in these celebrations, but I want to be sure that I meet my full obligations in communicating with the White House about arrangements made for President Havel here.

As you may recall, we have also invited President Bush to deliver the commencement address at Lehigh on Sunday, 31 May 1992. We will continue to hold that invitation open, while in parallel seeking to identify an alternate speaker who will be content to step aside if our President finds it possible to include Lehigh University among his 1992 commencement addresses. Since he honored the campus of one of the university presidents in his Council of Advisors on Science and Technology last year (Princeton), I do hope that he will find it possible to accept our invitation to Lehigh University for 1992.

Thank you for your consideration.

Sincerely,

PL:ekg

cc: ✓ D. Allan Bromley

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9124396
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: GREGG, Judd: GOVERNOR OF NEW HAMPSHIRE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/08/91

SUBJECT: RE: HIS SUPPORT FOR THE U.S. FIRST PROGRAM.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

COPIES TO: INTERNATIONAL/POLICY
D. Allan Bromley

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

OSTP RECEIVED: 10/15/91 DEPT RECEIVED:
FILE: P-EDUCATION

4396



STATE OF NEW HAMPSHIRE

OFFICE OF THE GOVERNOR

RECEIVED

JUDD GREGG, GOVERNOR

91 OCT 15 AM : 32

October 8, 1991

OFFICE OF THE
DIRECTOR

Dr. D. Allan Bromley
Science Advisor to the President
Executive Office of the White House
Washington, DC 20506

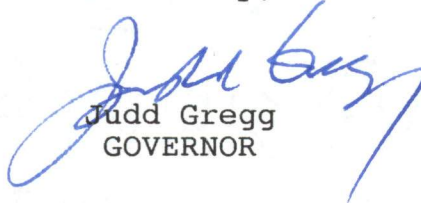
Dear Dr. Bromley:

The purpose of this letter is to express my full endorsement of U.S. FIRST, and to strongly encourage you to support the current grant request for FIRST Points that is under review in the National Science Foundation.

Having directly participated in the FIRST Points pilot program, I can attest to the excitement and the positive impact the FIRST Points program has on the school system and students that participated. The program motivates the students and inspires the teachers. It fosters a true partnership between education and business, where both sides benefit.

As a national organization, U.S. FIRST fills a critical void, beyond the FIRST Points program. By focusing on the creation of demand for science and math knowledge, it serves as a powerful ally to the school reforms and teacher training programs that are underway. Dean Kamen refers to US FIRST as the "Olympic Committee for Smarts." I think it fits and know it is needed. The faster US FIRST can bring all their programs to life, the more our schools, our students, and our society will benefit.

Sincerely,



Judd Gregg
GOVERNOR

JG:p

THE WHITE HOUSE
WASHINGTON

October 22, 1991

Dear Governor Gregg:

Many thanks for your letter of October 8 concerning U.S. FIRST which arrived while I was in Japan chairing the US/Japan Joint High Level Commission.

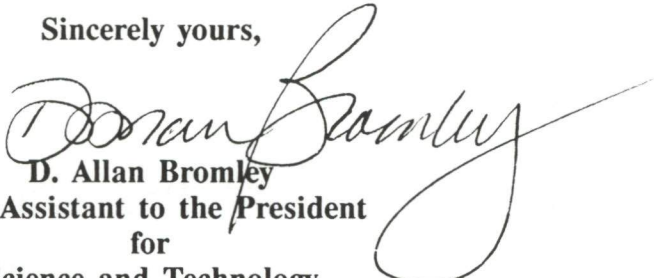
I agree with you entirely about the sterling qualities of Dean Kamen's program and will do everything I can to help it along.

It is enormously refreshing to see a young person like Dean who not only has wonderful fresh ideas, but who also has the drive, initiative, and the talent to carry these ideas through to actual programs. I have long felt that what our schools needed was a substantial infusion of American entrepreneurial spirit and Dean Kamen provides it at its best.

Many thanks for writing and for your support of this excellent program.

With all best wishes,

Sincerely yours,


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

The Honorable Judd Gregg
Governor
State of New Hampshire
Concord, New Hampshire 03301-4990

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9124334
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: KAMEN, Dean: U.S. FIRST

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/07/91

SUBJECT: THIS LETTER IS A FOLLOW UP TO A MEETING WITH DR.
BROMLEY AND PROVIDES A RECAP OF WHAT U.S. FIRST IS
TRYING TO ACCOMPLISH.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

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

OSTP RECEIVED: 10/08/91 DEPT RECEIVED:
FILE: P-EDUCATION



4334
RECEIVED

91 OCT 8 P 2: 59

October 7, 1991

OFFICE OF THE
DIRECTOR

Dr. D. Allan Bromley
Science Advisor to the President
Executive Office of the White House
Washington, D.C. 20506

Dear Dr. Bromley:

Thank you for an enjoyable meeting. As requested, the following is a quick recap of what U.S. FIRST is trying to accomplish, what successes we have had to date, and what our needs are to move forward on a national scale.

U.S. FIRST is committed to selling science, math, and technology to Americans, particularly it's kids, with the same intensity and sophistication that professional sports organizations and the U.S. Olympic Committee use to promote sports.

The founders of U.S. FIRST have spent two years developing a series of marketing programs and events to promote science, math, and technology to America's youth inside and outside of the classroom. A successful pilot of FIRST POINTS, a student incentive program involving over 1000 students, was recently completed in four schools in Manchester, New Hampshire. Enclosed is a one page overview of FIRST POINTS and some of the testimonials received. Also enclosed is an overview of U.S. FIRST and the other programs we want to implement.

The virtual lack of visible role models from the world of science and technology will be addressed by two other U.S. FIRST programs. Kids desire to play sports because they see adults playing the game, enjoying it and making big money for excelling at it. We need to showcase adults having fun with technology. We are planning a series of engineering contests that will be conducted across the country. Corporate teams will compete at the "professional" level while universities will compete at the collegiate level. State and regional competitions leading to the national

FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY

championship will serve as fund raisers to support this and other U.S. FIRST programs. Smaller scale contests involving kids competing in local leagues and competitions will be conducted through the N.S.T.A. which has already endorsed this program.

Consistent with the goal of making heroes of those that excel in technical competition, U.S. FIRST proposes to create a contemporary Science and Engineering Hall of Fame that kids will relate to. As an example, there will be a consumer products wing that will honor the creators of such things as Pump Sneakers and Nintendo. Coupled with the Hall will be a national scale interactive science center, that will provide kids and their parents the opportunity to experience the wonders and fun of science in a dynamic, enjoyable way. Many of the exhibits will be mobile to allow us to bring them to local communities as part of the FIRST WoW initiative, which stands for Wonders on Wheels.

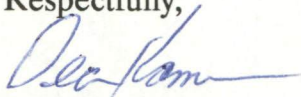
In a short period of time U.S. FIRST has developed a strong following. These believers agree that America needs an "Olympic Committee for smarts in science and math". Active supporters of U.S. FIRST extend from officials on the White House staff, to Presidential candidates, to governors and congressmen, to the executive board of the National Science Teachers Association, to board members of the Council on Competitiveness, to leaders of such respected universities as RPI, MIT, Cal Tech and Duquesne, to major corporations and foundations across the country.

The issue we face is the classic venture start-up of a new company. We need "seed money" until we are "profitable" in three years. A \$5.1 million grant request was submitted to the National Science Foundation to help offset the start-up costs of FIRST POINTS (presently in review). While Corporate America will be investing many times that amount through prizes and participation fees, our concern is that the numbers submitted may be too large for NSF to support alone. The Department of Energy, however, may be helpful in sharing some of this commitment with the NSF.

In addition, U.S. FIRST needs funds to staff the organization, cover operating expenses, complete the program prototypes, and recruit companies to sponsor the programs on a national scale. Cost projections for those expenses amount to \$2.0 million per year for the next three years. U.S. FIRST has already arranged the donation of a 155,000 square foot historic building for the Hall of Fame and Science Center. We have also secured more than \$1 million in pledges towards the renovation costs. We need to raise an additional \$4 million to complete that project, recruit companies to fund the exhibits, and staff the operation.

While the start-up costs of the FIRST programs total a significant sum of money, with over 40 million students as our target audience, it's less than forty cents per student. It's an investment America must make. More importantly, every dollar U.S. FIRST spends on creating demand for science and math knowledge will yield greater returns on the over 400 billion dollars spent annually on education. Also each of these programs and the Hall of Fame will be enduring and self-funding resources that continue to avail corporations, and educational institutions a common ground where each can do its part and profit from the partnership. Your offer to help us find sources of the start-up funds is most appreciated.

Respectfully,

A handwritten signature in blue ink, appearing to read "Dean Kamen", with a long horizontal flourish extending to the right.

Dean Kamen

DK/jr
enclosures

cc: J. Thomas Ratchford
Richard A. Osborne

FIRST POINTS

To reach young minds we must challenge old mindsets.

FIRST Points is a unique incentive program that allows science and math teachers to recognize and encourage improvements in student effort through the issuance of stamps with varying point values that the students can collect and exchange for popular merchandise.

The intent of the program is not to limit teacher rewards to only those students that excel in science and math, through high grades. The sad truth is that grades do not represent a motivating force to many of our youth today. Rather, FIRST Points represents an innovative way to motivate disinterested, or underachieving, students to work harder in science and math. By providing short term incentives that children relate to, the program serves as a "marketing hook" to get children to seek science and math knowledge because they want to, not because they have to. Over time, the founders of FIRST Points believe that the students will come to realize that the true rewards are the knowledge they have gained, and heightened level of self-esteem they have earned - not the prizes.

The FIRST Points pilot study was conducted in four junior high schools with over 1,000 students in grades six through eight. The enthusiasm for the program among the students, teachers, and administrators exceeded expectations. The children started looking forward to science and math class, and actively seeking extra credit work to earn more points. The improvement in grades, reflected the improvement in the attitudes the students brought into the classroom. Teachers were also stimulated to seek out creative ways to utilize the points to reinforce lesson plans. On the back of this page are some survey responses we received.

FIRST Points is one of many progressive programs created by U.S. FIRST, which is a national coalition of education, business, and government interests intent on stimulating broad student demand for scientific knowledge and literacy through the strategic use of media, and the tactical use of consumer marketing techniques.

If you want to learn more about FIRST Points, or U.S. FIRST, please call:

(603) 666 - 3906

FIRST Points Testimonials

Manchester, New Hampshire

"FIRST Points is an extraordinary program certain to grow and blossom into a national event."

New Hampshire Governor Judd Gregg

"FIRST Points has unlocked initiative, creativity, and imagination in the students...and prompted greater interaction between students and teachers."

David C. Messier, Principal of Southside Junior High School

"Initially, I voiced reservations....now I certainly see the merits."

Edward L. Wade, Principal of Parkside Junior High School

"For the first time in 22 years, the kids are actually looking for more work to do in the spring, even during the seventh period."

Seventh grade teacher at Parkside Junior High School

"My science grade went from an F to a B!"

Carol Bryant, 7th grader

"I showed an increase in math and I was really proud of myself because of my grades."

Jason Nestor, 6th grader

"After the program started in my daughter's school, I noticed an immediate change."

Bob Bryant, parent

"M&M/Mars is proud to be a sponsor, and truly excited about the future growth of the program."

Paul Zajas, District Marketing Manager, M&M/Mars

"Organizations, such as FIRST, allow business, community, and educators to work together for the betterment of all."

Sylvia Swiatek, McDonald's Owner/Operator

U.S. FIRST OVERVIEW

For the Inspiration and Recognition of Science and Technology

U.S. FIRST is an innovative alliance of business, education, and government to reverse America's plunge toward scientific and technological illiteracy. U.S. FIRST approaches this quest as a job of motivating and marketing that will compliment curriculum reforms. The ultimate mission is to stimulate broad demand by leading young people to see science as fun, exciting, and rewarding; to have students recognize the importance of technological advance as a cornerstone of America's growth and global leadership; and to elevate the level of scientific literacy throughout America. This will be done through the use of games, contests, celebrities, the use of contemporary marketing and media techniques, through hands on science tools, and imaginative teaching materials.

U.S. FIRST's approach is distinctive because a) the focus is motivational, b) it is specifically a private sector initiative that depends on a partnership of mutual advantage between the corporate and education communities, and c) it is organized as a national marketing advocacy for science and math.

U.S. FIRST will target members of the next generation while their minds are still open and their attitudes can still be influenced. We will pursue our targeted audience wherever they are, whether that be in the classroom, in the shopping mall, or in front of the TV. Our approach will be media wise and market driven. We will use the same marketing tools and techniques that often distract our youth, to attract them to science and math. A number of prototype programs have been developed. The programs are designed to attract and hold media attention as well as hit the hot buttons of America's youth. U.S. FIRST introduced a student incentive program last spring called FIRST Points™. The program allowed teachers to recognize and reward student improvements in math and science with points that the children could exchange for merchandise they desire. Significant improvement in student interest and performance was stimulated during the program, particularly noticeable in students that were previously disinterested and/or underachieving.

How will U.S. FIRST measure success? To the extent that we succeed, more students across all segments of our population will be science and math enthusiasts. The attitude of next generation will be more favorable, reflected in the adjectives used to describe science and math. Enrollment and performance in science and math classes will be improved. America's next generation will routinely count the heroes of science and technology among their role models. Ultimately, our society will be more scientifically literate.

Is it really possible to inspire and motivate children to develop a sustained intellectual curiosity about science and technology by using marketing programs and promotions? The founders, and supporters, of U.S. FIRST believe it is not only possible, but absolutely necessary. U.S. FIRST is a national institution that will be creatively channelling some of the vast marketing expertise and resources of corporate America into a united "partnership" with foundations, government, and educators, with a shared mission of promoting the products of science, math, and technology to America's youth as if our future depended on it. Nothing less is acceptable.

FIRST INCENTIVE AND RECOGNITION PROGRAMS

FIRST Points

An incentive-based program allowing teachers to provide students with tangible rewards for improvement in science and mathematics.

FIRST Place

A nationwide network of kiosks, in shopping malls and other locations, consisting of science and math computer games that rewards its players with merchandise coupons and FIRST Points.

FIRST ABCs

A series of creative problem-solving contests, called FIRST ABCs (Applied Brainpower Competition series), providing a unique arena in which corporations, colleges, or secondary schools can compete in a challenging, but fun-filled competitive setting.

FIRST in Class

A teacher incentive program providing superior teachers with recognition and monetary awards while capturing their exceptional teaching skills on videos which will be distributed to schools nationwide.

Science Circuit

An instructional video library featuring superstar celebrities that will lend excitement and relevance to the application of everyday science.

Science Journeys Boxed to Go

A variety of "packaged" field trips with turn-key science lessons that can be brought to the classroom.

The National Challenge

A program challenging America's youth to solve "unsolvable" programs of mathematics and win a million dollar prize.

The FIRST Prize

An American version of the Nobel Prize creating real world heroes in science, mathematics, and technology.

The Science and Engineering Hall of Fame

A child-oriented Hall of Fame for great American men and women that "humanizes" and honors their scientific contributions to society.

The Hands-On Science Center

An interactive science center and playground for children of all ages linked to the Hall of Fame. An offshoot is the FIRST Wonders on Wheels (WOW) which would bring interactive science exhibits to schools.

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9124345
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: CHAUDHARI, Praveen: IBM CORP.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/01/91

SUBJECT: A SUGGESTION TO START A POSTAL STAMP PROGRAM
DEPICTING EDUCATIONAL THEMES.

DIRECTORATE STAFF
ASSIGNED: D. Allan Bromley ASSIGNED:

ACTION STAFF
REQUIRED: AS APPROPRIATE ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 10/22/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO:
INTERNATIONAL/POLICY

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

OSTP RECEIVED: 10/08/91
FILE: P-EDUCATION

DEPT RECEIVED:

Don R.
What Thank
you?
Allan

4345
IBM

International Business Machines Corporation

RECEIVED

Thomas J. Watson Research Center
P.O. Box 218
Yorktown Heights, NY 10598

91 OCT 8 P 2: 59

OFFICE OF THE
DIRECTOR

October 1, 1991

The Honorable D. A. Bromley
Assistant to the President
Office of Science & Technology
Old Executive Building, Room 358
17th Street and Pennsylvania Avenue NW
Washington, DC 20506

Dear Allan:

Many thanks for your note of September 19, 1991. I found the brontosaurus story apropos of the scientific culture in our society.

I do have a suggestion. Could we not bring out a set of stamps based on a theme - for example, education. Quite apart from being a Presidential initiative and its obvious political appeal, it has the virtue that we can have a stamp depicting physics, chemistry, mathematics, philosophy, and so on. Transportation and communications, amongst a larger number of possibilities, are other themes. These can have a great deal of scientific and technological content and they touch all of us.

With all best regards,

Sincerely yours,

Praveen

Praveen Chaudhari

/ph

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

October 16, 1991

Dear Dr. Chaudhari:

Your suggestion for a set of stamps is an excellent one and deserves serious consideration. While the U.S. Postal Service selects the designs for stamps, I am certain that they would welcome this kind of suggestion.

To provide a forum for interagency comment on your idea, I am referring your letter to Admiral James Watkins, Chairman of the Committee on Education and Human Resources of the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET). Admiral Watkins and his Committee are actively seeking ways to stimulate public interest and awareness about science and mathematics education. Since David Kearns, the Deputy Secretary of Education, is also Vice Chairman of the FCCSET Committee, he may see possibilities for some stamps in other areas of education as well.

Thank you again for your very helpful suggestion.

Sincerely,



D. Allan Bromley
Director

Dr. Praveen Chaudhari
International Business Machines Corporation
Thomas J. Watson Research Center
P. O. Box 218
Yorktown Heights, NY 10598

cc: Admiral James D. Watkins

OSTP STAFFING SHEET

SUBJECT: Response to ltr from P. Chaudhari re starting a postal stamp program

ORIGINATOR: Charles Dickens

PHONE 5101

DATE ORIGINATED: 10/15/91

DATE DUE 10/22/91

CORR TRACKING NO: 9124345

EXTERNAL COORDINATION:

	COMMENTS	DATE
DIRECTOR		
CHIEF OF STAFF		
GENERAL COUNSEL		
EXEC. ASST.		

ACTION REQUESTED:

Signature and return to Ann Caligiuri for dispatch

[illegible]

Send him a copy
of Gumburg's article

Document Originally
Attached to
Following Page

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9124298

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: JONES, James O.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/30/91

SUBJECT: RE: Dr. Bromley's September 10 speech at the
conference entitled, "Engineers in America: Shortage
or Surplus".

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:
DATE COMPLETED:

STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

WHITE HOUSE TRACKING #:

CONTACT PERSON:
PHONE:

EXT:

REMARKS:

OSTP RECEIVED: 10/04/91
FILE: P-EDUCATION

DEPT RECEIVED:

4298

RECEIVED

September 30, 1991

91 OCT 4 A10:47

James O. Jones
81 West Vera Lane
Tempe, Arizona 85284

OFFICE OF THE
DIRECTOR

Dr. D. Allan Bromley
Assistant to President for Science and Technology
White House
Washington, D.C.

Re: Shortage of Engineers

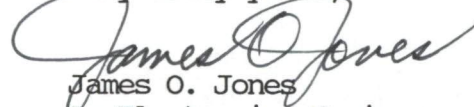
Dr. Bromley:

I take objection to the theme of your September 10, 1991 speech at the conference entitled "Engineers in America: Shortage or Surplus?"

There is not a shortage of engineers, in particular in the Systems, Electronics, and Electrical fields. The engineering job market in the areas of salary and number of unemployed engineers verify there is not a shortage. If a "demand" market existed (indicating a shortage) the salaries of engineers would shoot up rapidly and the number of unemployed engineers would be nil! Neither of these situations exist!

And, further, the "knee" that occurs in an engineer's salary/experience curve would not occur if a shortage of engineers exists.

Very truly yours,


James O. Jones
An Electronics Engineer

JOJ/joj

xc: File - Engineer Shortage

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9124230
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: HEILMEIER, George H.: BELLCORE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/24/91

SUBJECT: RE: THE HOUSE WEDNESDAY GROUP EDUCATIONAL
CONFERENCE.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

COPIES TO: Carl Bretscher
D. Allan Bromley
INTERNATIONAL/POLICY

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

OSTP RECEIVED: 09/27/91 DEPT RECEIVED:
FILE: P-EDUCATION

Bellcore

ⓐ Bell Communications Research

RECEIVED

91 SEP 27 P 1:10

OFFICE OF THE
DIRECTOR

September 24, 1991

Dr. D. Allan Bromley
Assistant to the President
for Science and Technology
The White House
17th and Pennsylvania Avenues
Washington, DC 20500

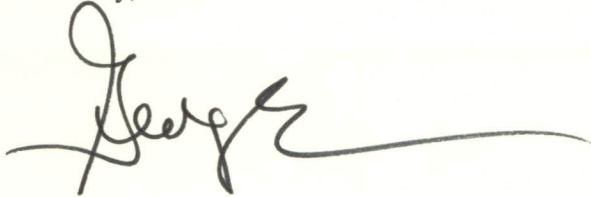
Dear Allan:

I very much enjoyed the opportunity to participate in the House Wednesday Group Educational Conference. The freewheeling open discussion of ideas was very refreshing and gave me new respect for the quality and dedication of our Representatives.

I am sorry that I could not attend the Saturday evening and Sunday parts of the program, but my wife and I are in the process of relocating to New Jersey and you know what that means.

Let's do it again sometime. I'd like to help the group in any way I can.

Sincerely,

A handwritten signature in dark ink, appearing to read "George", followed by a long horizontal flourish.

4230
George H. Heilmeier
President and Chief Executive Officer

290 West Mt. Pleasant Avenue
Post Office Box 486
Livingston, New Jersey 07039-0486
201-740-3131

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9124161
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: CRANBERG, Lawrence: Consulting Physicist

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/20/91

SUBJECT: A LETTER TO BERNARD KHOURY REGARDING "THE OLYMPIAN
COMPLACENCY ABOUT OUR POOR OLYMPIAD SHOWING."

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

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

OSTP RECEIVED: 09/24/91 FILE: P-EDUCATION
DEPT RECEIVED:

LAWRENCE CRANBERG, Ph.D.
CONSULTING PHYSICIST

1205 CONSTANT SPRINGS DRIVE
AUSTIN, TEXAS 78746

RECEIVED

TELEPHONE AND FAX
(512) 327-1794

91 SEP 24 P 2: 39

Bernard V. Khoury,
Executive Officer,
American Association of Physics Teachers,
5112 Berwyn Rd.,
College Park, MD 20740-4100

Sept. 20, 1991

OFFICE OF THE
DIRECTOR

Re: Olympian Complacency about our poor Olympiad Showing

Dear Dr. Khoury,

The story in the current AAPT Announcer on our performance at the XXII Physics Olympiad, is an Olympian example of complacency in the face of a very sad record of performance. To have only one gold medal, along with Canada and Norway - countries with one tenth and one-fiftieth of our population - and not to have one word of criticism or dissatisfaction is so sad, that I am outraged and am seriously considering dropping my membership in AAPT.

The only hopeful sign I see in the record is that one of the finalists came from the North Carolina School and two on the team came from Phillips - all highly selective secondary schools that board their students.

And yet AAPT consistently ignores my pleas to support such schools, and a former President of AAPT derided the idea!

I am marking a copy of this letter to the Secretary of Education, The Honorable Lamar Alexander, and to his Undersecretary for Research, Diane Ravitsch, to alert them to the backwardness of our educational "leaders" in an area in which vigorous leadership is essential to our national future. I am also marking a copy to D. Allan Bromley, Science Adviser to the President, to alert him to a situation which should concern him deeply.

Sincerely yours

Lawrence Cranberg

cc: The Honorable Lamar Alexander, Dr. Diane Ravitsch, Dr. D. Allan Bromley.

2200 Robert Ruark Drive
Southport, NC 28461
September 14, 1991

The President of The United States
The White House
1600 Pennsylvania Avenue
Washington, DC 20500

Dear President Bush:

Thank you for the letter and the picture. You are a great President. I appreciate all the work you have done for Americans.

I am surprised that my first grade teacher is going to have lunch with you and Mrs. Bush. Her name is Carol Midgett. She was my favorite teacher. If she comes in time, please share this letter with her. I bet you she will be surprised because she knows me. She won The Presidential Award for Excellence in Mathematics and Science Teaching. She is one of those points of light I've heard you talk about. You will enjoy meeting her.

I am enclosing a newspaper article about Mrs. Midgett. It was in The State Port Pilot, our town's newspaper. I hope you will enjoy reading about her.

Sincerely,

Graham Farrell

Graham Farrell
Third Grade
Southport Elementary

Enclosure

THE WHITE HOUSE
WASHINGTON

September 18, 1991

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY *Alan*
SUBJECT: Your Upcoming Meeting with Mathematics and Science
Teachers - October 4, 1991

The enclosed letter from a student of one of the teachers selected to represent those in North Carolina is one that I thought I should forward to you. Graham Farrell sounds like an unusual third grader!

Your spending a little time with these outstanding teachers, who are here in Washington as your guests for a week, is one of the high points in each of their lives. Superb elementary school teachers of science and mathematics are an endangered species and these teachers are superb ambassadors for the Bush Administration in their home locations.

Enclosure

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9123639
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: ADOLPH, Charles E.: DIRECTOR OF DEFENSE RESEARCH & ENGINEERS

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 08/27/91

SUBJECT: A COPY OF THE "DEPARTMENT OF DEFENSE MANAGEMENT PLAN
FOR SCIENCES AND ENGINEERING EDUCATION".

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

COPIES TO: D. Allan Bromley
FCCSET
INTERNATIONAL/POLICY
NATIONAL SECURITY

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

OSTP RECEIVED: 08/29/91 FILE: P-EDUCATION
DEPT RECEIVED:



DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING

WASHINGTON, DC 20301-3010

RECEIVED

91 AUG 29 AIO: 04 27 AUG 1991

OFFICE OF THE
DIRECTOR

Honorable D. Allan Bromley
Assistant to the President for
Science and Technology Policy
Executive Office of the President
Office of Science and Technology Policy
Washington, DC 20506

Dear Dr. Bromley:

I am pleased to send you the enclosed "Department of Defense Management Plan for Science and Engineering (S&E) Education," which is provided in accordance with Section 247(b) of the National Defense Authorization Act for Fiscal Year 1991, Public Law 101-510.

The Department assigns high priority to S&E education activities, because of the essential role played by scientists and engineers in maintaining our edge in defense technology. Indeed, through more than 150 individual programs, the Department currently invests more than \$1 billion annually in S&E education. Nearly one-half of this funding supports programs devoted solely and directly to production of scientists and engineers. Examples in this category are graduate fellowships and traineeships. In addition, the Department funds dual purpose activities which are equally essential. For example, defense research projects supported at academic institutions fulfill essential research needs, while at the same time providing research training for more than 8,000 S&E graduate assistants. Through the S&E portions of general education programs at the DoD Dependents' Schools and at the Military Academies, precollege and undergraduate students gain the necessary prerequisites for subsequent, more-specialized professional training.

Of course, the funding figures discussed above tell only part of the story. Volunteer efforts by thousands of DoD scientists and engineers are significant. Some volunteer efforts, such as participation by DoD personnel in adopt-a-school projects and in high school science fairs, have evolved into formal programs.

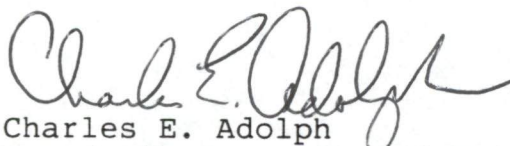
Under the management plan, assessments will be made of the magnitude of, needs for, and effectiveness of DoD S&E programs. Coordination both within DoD and with other federal agencies will also be facilitated.

Two other key features of the plan will move us toward greater program integration and will facilitate future program and budget decisions. The first is implementation of a formal S&E education program data call as part of the regular budget development cycle. For the first time S&E education program budget information will be identified Department-wide, distinct from other accounts. The second feature, and this is essential to optimum alignment of Department resources, is the formation of a Science and Engineering Education Panel that reports to the Director of Defense Research and Engineering. This panel will have representation from the Military Departments and from the Defense Agencies. It will advise and assist the Director of Defense Research and Engineering on DoD S&E education matters, facilitate program coordination, and develop recommendations for future actions.

We recognize that our efforts will pay even greater dividends when they are well meshed with activities of other federal agencies, state and local governments, and the private sector. Some of this will be accomplished through our participation in the Committee on Education and Human Resources, which operates under the auspices of your Federal Coordinating Council on Science, Engineering, and Technology.

The enclosed management plan identifies actions directed toward assuring adequate S&E education activity to fulfill long term defense needs. Section 247 of the National Defense Authorization Act for Fiscal Year 1991 requires that the Secretary of Defense, in coordination with the Secretary of Education, identify such actions to you. We will also keep you informed, through the Federal Coordinating Council on Science, Engineering, and Technology, on the policy, program, and resource actions that we take in the future to implement the "Department of Defense Management Plan for Science and Engineering Education."

Sincerely,

A handwritten signature in dark ink, appearing to read "Charles E. Adolph", is written over the typed name.

Charles E. Adolph

By Direction of the Secretary of Defense

Enclosure

**DEPARTMENT OF DEFENSE
MANAGEMENT PLAN FOR**

**SCIENCE AND ENGINEERING
EDUCATION**

AUGUST, 1991

DoD Management Plan for Science and Engineering Education

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INTRODUCTION

This is the first plan for the consolidated management of DoD's many activities in science and engineering (S&E) education. It follows the identification of the Director for Defense Research and Engineering (DDR&E) as the central focal point for managing and directing DoD's diverse enterprises in S&E education (Appendix A). The plan was created for many reasons, including a statutory requirement to report to OSTP on actions DoD may take to improve science, mathematics and engineering education for long-term Defense needs (Section 247(b) National Defense Authorization Act, Fiscal Year 1991, Public Law 101-510). DoD is deeply interested in S&E education in this country because an adequate supply of scientists and engineers is essential to maintaining technological superiority relative to potential adversaries, a key element of U.S. military strategy.

This plan was prepared by the DDR&E in coordination with the Office of the Assistant Secretary of Defense for Force Management and Personnel [OASD(FM&P)].

Purposes

- To establish DoD S&E educational activities in their proper position as part of the nation's priorities, policies and plans.
- To articulate DoD goals and objectives in science and engineering education.
- To outline a DoD management structure for S&E education under the leadership of the Director for Defense Research and Engineering.
- To identify implementation objectives and actions leading to an execution plan, designed to be updated annually, that will achieve DoD's S&E educational goals.

Scope

This plan covers all educational activities within DoD that relate to the conduct, encouragement, or enhancement of scientific, mathematical, and engineering education at all levels: precollege, undergraduate, and graduate. These activities are conducted under many statutory authorities (see Appendix B).

BACKGROUND

The environment for DoD's S&E education activities is framed by three major U.S. policies: national defense policy, technology policy, and education policy.

National defense policy holds that training the next generation of scientists and engineers is critical to maintaining a technological edge over potential adversaries. Recent events in the Persian Gulf underscore the value of maintaining technological superiority, a key element of U.S. military strategy since World War II.¹

U.S. technology policy seeks to make the best use of technology in achieving national goals, including national security. Science and engineering education in DoD supports two major elements in the current national strategy for achieving those goals.² Those elements are:

- A broad-based effort, involving the private and public sectors, to revitalize science and engineering education in this country at all educational levels.
- Federal investment in basic research, "especially in university research which, in addition to new knowledge, also produces trained scientists and engineers"²

The President's 1989 education summit with the nation's Governors produced National Education Goals as part of our national education policy. The two goals that relate most directly to science and mathematics education call for, by the year 2000:

- U.S. students leaving grades four, eight, and twelve to have demonstrated competency in challenging subject matter including mathematics and science.
- U.S. students to be first in the world in science and mathematics achievement.

The Committee on Education and Human Resources of the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) is developing a national strategy for science and engineering education, in support of the National Education Goals. The committee has produced a set of strategic

¹ "National Security Strategy of the United States;" The White House; March, 1990.

² "U.S. Technology Policy;" Executive Office of Science and Technology Policy; September 26, 1990.

objectives to guide future Federal actions in this area.³ The FCCSET is now required by law to produce an annual "strategic plan for an interagency program to enhance science, mathematics, and engineering education."⁴

DEPARTMENT OF DEFENSE GOALS AND OBJECTIVES

Goals

- Assure an adequate supply of capable scientists and engineers to meet the needs of national defense.
- Support the National Education Goals and the educational goals of the national technology policy, where those goals overlap DoD missions.

Objectives

- Improve the quality of precollege science and mathematics education and of undergraduate and graduate education in science and engineering fields important to national defense.
- Stimulate and encourage a greater number of American young people to continue their studies in science and mathematics and to consider careers in science and engineering.
- Support undergraduate, graduate and postdoctoral education in science and engineering fields important to long-term DoD needs.
- Help recruit and retain scientists, engineers and technical personnel of the highest quality for the DoD work force.
- Provide continuing scientific, engineering, and technical education or training needed for DoD personnel, civilian and military, to sharpen existing skills, acquire new skills, and develop full professional potential.
- Increase participation in science and engineering professions among members of underrepresented minorities, women, and handicapped persons.

³ "By the Year 2000--FY 1992 Report of the FCCSET Committee on Education and Human Resources;" February, 1991.

⁴ Section 501 of the "Excellence in Mathematics, Science and Engineering Education Act of 1990" (Public Law 101-589); enacted on November 16, 1990.

DEPARTMENT OF DEFENSE APPROACH

In order to accomplish DoD's goals and objectives, DDR&E will execute this management plan, and its resulting execution plans, in the context of the pertinent national policies. In its early phases, this approach calls for extensive review and analysis, because the historic activities of the Department are many, complex, and decentralized. This plan and the execution plan to follow must also retain the flexibility needed to respond to rapidly evolving environments in education, international relations and markets, and U.S. defense posture. This approach, involving both objective analysis and programmatic sensitivity, is intended to achieve maximum progress toward DoD's goals and objectives within the responsible fiscal constraints anticipated into the future.

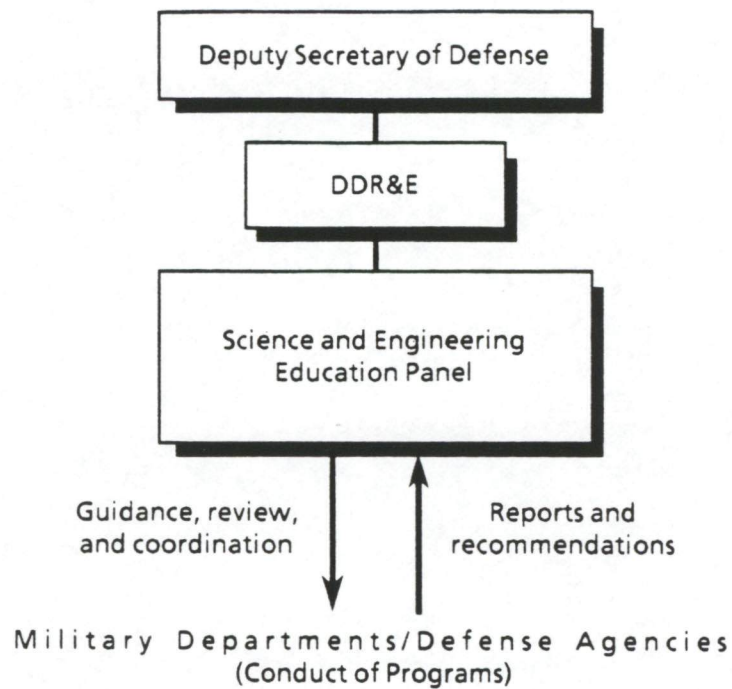
MANAGEMENT STRUCTURE

Overview

The execution of the programs that constitute DoD activities under this plan takes place within the Military Departments and the Defense Agencies. The management and direction of those programs, however, is focused upward upon a simple management structure within the Office of the Secretary of Defense (OSD). The structure consists of two elements: the Director for Defense Research and Engineering (DDR&E), to provide the leadership; and the Science and Engineering Education Panel, a review and advisory body, to provide continuous oversight of and coordination among the many programs of the Military Departments and Defense Agencies. This structure is depicted in Figure 1.

The DDR&E

In a memorandum of February 13, 1991 (Appendix A), the Deputy Secretary of Defense designated the DDR&E as the individual within OSD to advise and assist the Secretary regarding matters relating to science, mathematics, and engineering education and training. In exercising the authorities and performing the duties delegated by the memorandum, the DDR&E coordinates with the Assistant Secretary of Defense for Force Management and Personnel [ASD(FM&P)], and other officials of the Department of Defense, as appropriate.



Note: DDR&E = Director of Defense Research and Engineering.

FIGURE 1. SIMPLIFIED DIAGRAM OF MANAGEMENT STRUCTURE

The Science and Engineering Education Panel

To oversee and review the execution of DoD's S&E education activities, R&AT will establish a Science and Engineering Education Panel with representation from the Military Departments and pertinent Defense Agencies (membership listed in Appendix C). The panel will be chaired by a representative of the DDR&E and will advise DDR&E on S&E education and training matters.

The Science and Engineering Education Panel will:

- Coordinate activities of the DoD organizations currently involved in S&E education. The panel will provide a forum for DoD Components to discuss problems and ideas for new programs, and to exchange information about activities.
- Help to coordinate DoD activities with activities of other federal agencies, through the FCCSET or other interagency efforts.
- Provide an annual review of the S&E education programs of the Military Departments and Defense Agencies, to include an assessment of the programs' adherences to policies and an evaluation of program effectiveness.

The panel shall advise the DDR&E on:

- Actions the Department of Defense may take to improve education in the scientific, mathematics, and engineering skills necessary to meet the long-term national defense needs of the United States for personnel proficient in such skills.
- Programs the Department should establish and conduct to carry out such actions. Examples might be programs to: (1) assist retiring civilian or military personnel to pursue science, mathematics, or engineering teaching as a second career; (2) increase the participation of women and minorities as science and engineering students or faculty in colleges and universities; (3) establish partnerships and support personnel exchanges between DoD laboratories and educational institutions; (4) enhance precollege education; and (5) support cooperative work-education for DoD laboratory employees.
- The need for DDR&E to delegate statutory authority to support such S&E education activities.
- The need to allocate or reallocate resources for S&E education activities, to provide options and recommendations for decisions to be made through the Planning, Programming and Budgeting System (PPBS).

The panel will also ensure that DoD's S&E education activities are well coordinated with related DoD activities, such as education and training conducted under the authorities of the Defense Acquisition Workforce Improvement Act.

IMPLEMENTATION

As DoD's executive manager for S&E education, the DDR&E will monitor the accomplishment of the implementing actions assigned below. Working with the ASD(FM&P), the DDR&E also will ensure that appropriate resources are provided to accomplish the objectives of these tasks.

Implementing Actions

Action 1: Assess the future availability of scientists and engineers for defense needs.

Implementation: The Science and Engineering Education Panel will develop a comprehensive projection of national S&E supply and demand through the year 2020, by discipline. The projection will identify anticipated shortfalls in the availability of S&E's for defense needs in light of: (1) trends in the population in the S&E education pipeline, and (2) the effect of activities supported by other Federal agencies, by other public sources and by the private sector. Projections of supply will be available in December 1991 and information on demand for S&E's, with preliminary analysis of the defense implications, will be available in July 1992. The panel will periodically report this information to the DDR&E.

Action 2: Evaluate and improve DoD policy and management guidance for the execution of S&E education and training activities.

Implementation: Considering projected defense needs for S&E's and anticipated shortfalls in meeting those needs, the Science and Engineering Education Panel will formulate and recommend to the DDR&E appropriate DoD policy for S&E education and management guidance for program execution. The panel will make its initial recommendations no later than January 15, 1992. Thereafter, it will recommend policy changes and updated guidance on a continuing basis, no less often than annually.

Action 3: Set overall program objectives for S&E education and training activities.

Implementation: The Science and Engineering Education Panel will develop and publish annually a set of program objectives for activities under the purview of this management plan. The objectives will allow measurement of progress during the period of the current, Six-Year Defense Program. The

panel will publish its initial set of objectives by January 15, 1992, to facilitate program decisions during consideration of DoD Components' Program Objective Memoranda (POM's) for Fiscal Years 1994-1999.

Action 4: Assess the effectiveness of DoD's programs and activities in meeting the overall program objectives.

Implementation: The Science and Engineering Education Panel will conduct an annual review of the S&E education programs of the Military Departments and Defense Agencies. The panel will report to the DDR&E on the results of that review, including: an assessment of the overall S&E education program's adherence to national and DoD policies; and an evaluation of individual program effectiveness in addressing defense needs and meeting stated goals and objectives. The panel will submit the first such annual report by January 15, 1993.

Action 5: Identify the levels of funding for DoD S&E education activities.

Implementation: The panel will compile information on DoD Components' actual and planned investments in S&E education. The information will be assembled at appropriate times to support reviews of DoD Components' POM's and Budget Estimate Submissions, and to support the President's Budget Submission. Data will include funding by educational level (primary, secondary, undergraduate, graduate, postdoctoral and faculty) and by program.

Action 6: Establish a level of DoD activity in S&E education and training that is consistent with DoD missions and defense needs.

Implementation: The panel will advise the DDR&E annually about programs that should be expanded or initiated and on other activities or actions that DoD should pursue. The recommendations will be based on projected defense needs and will consider complementary or competing activities of organizations external to DoD. The panel will submit initial recommendations by January 15, 1992.

Action 7: Increase the effectiveness and efficiency of DoD's S&E education and training activities.

Implementation: The panel will report annually to the DDR&E on programs that should be considered for joint execution, consolidation, or termination. The report will also identify opportunities for cooperative efforts with other federal agencies' or with other public or private sector activities. The primary basis for these recommendations will be cost effectiveness and efficiency. The panel will submit the first such report by January 15, 1992.

The implementing actions described above will be blended together as each action is taken to form a recurring execution plan, to be updated annually, for DoD management of S&E education programs. Each plan will cover a period paralleling that of the Six-Year Defense Plan in effect at the time. The Science and Engineering Education Panel will issue the first action plan by January 15, 1992.

Reporting on the Implementation

The DDR&E will periodically report to the Deputy Secretary of Defense on the status of accomplishments ensuing from the implementation of this plan. This includes advising the Deputy Secretary of Defense as to the appropriateness of S&E education activities and the sufficiency of levels of support for those activities. It also includes recommending changes to DoD policies, programs and resources.

As a benchmark, the preliminary profile of FY 1991 resources already committed to science and engineering education is about \$1.1 billion--about \$450 million of this investment is in programs whose principal purpose is S&E education, approximately \$500 million is in the science and engineering portion of programs whose principal purpose is general education, and about \$150 million is the S&E education investment within programs whose principal purposes is the conduct of university research.

APPENDIX A

This appendix contains the memorandum designating the Director, Defense Research and Engineering as the individual within the Office of the Secretary of Defense to advise and assist the Secretary of Defense on matters related to science, mathematics, and engineering education.



THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

February 13, 1991

MEMORANDUM FOR: DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARY OF DEFENSE FOR
FORCE MANAGEMENT AND PERSONNEL
DIRECTOR OF ADMINISTRATION AND MANAGEMENT

SUBJECT: Delegation of Authority Relating to Science and Engineering

The authority of the Secretary of Defense under Sections 2191 (relating to graduate fellowships), 2192 (relating to science, mathematics, and engineering education), 2193 (relating to science and mathematics education improvement program), 2194 (relating to education partnerships), and 2195 (relating to DOD cooperative education programs) of Title 10 of the United States Code is hereby delegated to the Director of Defense Research and Engineering (DDR&E).

The authority of the Secretary of Defense under Section 8071 of the Department of Defense Appropriations Act, 1991 (Public Law 101-511) (relating to graduate fellowships) is hereby delegated to the DDR&E.

The authority of the Secretary of Defense under Section 1207(c) of the National Defense Authorization Act for Fiscal year 1987 as amended by Section 832 of the National Defense Authorization Act for Fiscal Year 1991 (Public Law 101-510) (relating to enhancing participation of historically black colleges and universities and minority institutions in defense research) is hereby delegated to the DDR&E. The exercise of this authority by the DDR&E should focus on providing scientific assistance of the types described in Section 1207(c)(3).

Pursuant to Section 2192(b) of Title 10, the DDR&E is hereby designated as the individual within the Office of the Secretary of Defense to advise and assist the Secretary regarding matters relating to science, mathematics, and engineering education and training.

The DDR&E shall prepare for the approval of the Deputy Secretary of Defense the report required by Section 247(b) of the National Defense Authorization Act for Fiscal Year 1991 (Public Law 101-510).

The DDR&E should exercise the authority and perform the duties delegated by this memorandum in coordination with the Assistant Secretary of Defense for Force Management and Personnel and other officials of the Department of Defense as appropriate.

APPENDIX B--STATUTORY AUTHORITIES FOR DoD ACTIVITIES IN SCIENCE AND ENGINEERING EDUCATION

This appendix lists the principal statutes and public laws under which DoD conducts S&E education activities. The compilation is contained in the tables on the following pages. It is primarily based on information provided to the Office of the Secretary of Defense by the Military Departments and Defense Agencies that execute these S&E education programs.

**STATUTORY AUTHORITIES UNDER WHICH DoD CONDUCTS S&E EDUCATION
ACTIVITIES**

STATUTE	DESCRIPTION
5 U.S.C. §4103	Authorizes civilian personnel training programs, either in government or non-government facilities.
10 U.S.C. §2005	Authority to give education assistance to members of the armed forces and to require them either to serve on active duty for a period following completion of the education or to reimburse the government for the educational costs.
10 U.S.C. §2007	Authorizes payment of tuition for off-duty training or education. Limits payment of more than 75 percent of the charges for such training or education, in most cases.
10 U.S.C. §2101 et seq.	Governs the Senior Reserve Officers' Training Corps and authorizes financial assistance for selected members thereof.
10 U.S.C. §2191	Provides authority to award National Defense Science and Engineering Graduate Fellowships in science, engineering or other fields of study important to national defense.
10 U.S.C. §2193	Authorizes DoD to: (1) support undergraduate or graduate education in science and engineering disciplines critical to national security functions of DoD, subject to certain conditions; and (2) conduct programs to improve the mathematics and scientific knowledge and skills of elementary and secondary school students and teachers.
10 U.S.C. §2194	Authorizes education partnership agreements between defense laboratories and U.S. educational institutions for the purpose of encouraging and enhancing study in scientific disciplines at all levels of education.
10 U.S.C. §2195	Directs defense laboratories to establish cooperative work-education programs for undergraduate and graduate students, in association with U.S. colleges or universities.
10 U.S.C. §2358	Provides authority to engage in basic and applied research projects by contract or grant to educational institutions.
10 U.S.C. §2360	Provides authority to contract for the temporary or intermittent services of students at institutions of higher learning in order to provide technical support to defense research and development laboratories.
10 U.S.C. §4331 et seq.	Enabling legislation for the U.S. Military Academy.
10 U.S.C. §6951 et seq.	Enabling legislation for the U.S. Naval Academy.
10 U.S.C. §7041 et seq.	Enabling legislation for the U.S. Naval Postgraduate School.

**STATUTORY AUTHORITIES UNDER WHICH DoD CONDUCTS S&E EDUCATION
ACTIVITIES**

STATUTE	DESCRIPTION
10 U.S.C. §9314	Enabling legislation for the Air Force Institute of Technology.
10 U.S.C. §9331 et seq.	Enabling legislation for the U.S. Air Force Academy.
20 U.S.C. §241	Enabling legislation for DoD dependents' schools in the United States--authorizes the provision of public education to children residing on Federal property in cases where local education agencies cannot supply facilities.
Public Law 91-648	Intergovernmental Personnel Act of 1970--gives authority to support training and development for employees of state and local governments (e.g., state college or university faculty).
Public Law 95-561	Defense Dependents' Education Act of 1978--Establishes the defense dependents' education system to provide public education for dependents of military or DoD civilian personnel stationed in overseas areas.
Public Law 101-510	National Defense Authorization Act for FY 1991--Sec. 832 gives authority and direction to provide infrastructure assistance to historically Black colleges and universities and to other minority institutions.

APPENDIX C

The SEEP Panel is chaired by the Director, ODDDR&E/R&AT (Research and Laboratory Management). It contains representation from the following offices:

The Office of the Assistant Secretary of Defense (Force Management and Personnel)

The Office of the Assistant Secretary of the Army (Manpower and Reserve Affairs)

The Office of the Assistant Secretary of the Army (Research, Development and Acquisition)

The Office of the Assistant Secretary of the Navy (Manpower and Reserve Affairs)

The Office of the Assistant Secretary of the Navy (Civilian Personnel Management)

The Office of Naval Research

The Office of the Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations and Environment)

Department of the Air Force (Science and Technology)

The Defense Communications Agency

The Defense Intelligence Agency

The Defense Logistics Agency

The Defense Mapping Agency

The National Security Agency

The Defense Advanced Research Projects Agency

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TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 08/19/91

SUBJECT: RE: AN ORGANIZATIONAL MODEL RECEPTIVE AND RESPONSIVE
TO THE DYNAMICS OF CHANGE.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

Office of Science and
Technology Policy

Old Executive Office Bldg.

Washington, DC 20506

Louis Zrebić, Ph.D.

P.O. Box 2164

Niagara Falls, N.Y. 14302

August 19, 1991

Dear Dr. Bromley:

In earlier letters to you,
I have presented ideas on the
importance of dynamics among
the disciplines of knowledge and on

vehicles for effecting the dynamics
base to change (e.g., hubs and
networks). This letter presents
a model that is receptive
and responsive to change, an
organizational model. This
model addresses the organizational
frameworks needed to detect
and resolve change events and
issues.

In the enclosed copy of my
August 18, 1991 letter to Education
Secretary Lamar Alexander, I have

presented a framework for the Office of Educational Research and Improvement that emphasizes anchors and agents. The anchors transcend the limitations of the permanent topics in that they refer to the basic mechanisms in cognitive and affective development. These mechanisms must address the specific institutional responsibilities of this office. That is, these

mechanisms must summarize the effectiveness of the individual component threads (processes) basic to their responsibilities.

They must also present summaries on the mechanisms basic to their other goals (e.g., changes in teaching and learning research).

These anchors may be select university centers (hubs) or even select publications with specified topics. ^{They} ~~They~~ must interact with the agents

and produce mutual development.

The agents address the changes in the real world. The agents must represent all possible events and issues in the real world (e.g., the field researchers, industry, and small businesses). A full representation of such events and issues may be achieved via a panel. The agents must produce reports on the appropriate changes and issues and their impact on the country. These

reports must be sent to all anchors and evoke the expected response.

This model of anchors and agents should detect and respond to all events and issues. The agents are continuous reminders to the anchors and conversely. Since the agents are of a short-term nature, for the appropriate area, flexibility and diversity are easily addressed. This model

provides continuity in a state of
flux.

Thank you.

Sincerely,
Louis Zebec H

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MADE IN U.S.A.

1
Louis Zrebiac, Ph.D.

P.O. Box 2164

Niagara Falls, N.Y. 14302

August 18, 1991

Education Secretary Lamar

Alexander

Department of Education

Office of Educational Research
and Improvement

U.S. Department of Education

555 New Jersey Ave, N.W.

Washington, DC 20208

Dear Secretary Lamar Alexander:

I found the suggested frameworks
for the Office of Educational Research
and Improvement (The Chronicle of
Higher Education, August 7, 1991) very
interesting. With a Ph.D. in educational

psychology and experienced as a cancer researcher at Roswell Park (Buffalo, N.Y.), I can appreciate the differences in the proposed frameworks.

Since my employment at Roswell Park, I have noted the changes in cancer research. The emphasis has changed from surgery to chemotherapy to early detection and prevention to gene therapy and the immune system.

The OERI can learn from this history of events. A framework must be anchored and

yet flexible to the changing research world.

To limit the framework of OERI to only permanent Topics is questionable. To limit the framework of OERI to field-initiated research is also questionable. Anchors and agents seem to be the best of the possible options. The agents must be independent of the anchors and represent the dynamics of the real world. The anchors must respond to the agents. Anchors and agents must interact.

All anchors must address the most basic mechanisms of the area of interest (i.e., cognitive and affective development). These anchors must be at the most basic levels to address these mechanisms.

They must detect change in the pragmatic world of education.

These anchors may be select university centers or select publications presenting select topics and papers. These anchors must lead in stimulating research and development in the mechanisms of interest.

Proctors and agents as a model should represent the institutional responsibilities of education as well as the force changes in the real world.

Thank you.

Sincerely,
Louis Zuker Jr.

cc Dr. Allan Bromley, Assistant to
the President for Science and Technology,
Office of Science and Technology Policy.

ACM Association for Computing Machinery
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New York, N.Y. 10036
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