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(Lange/Martin)
October 18, 1989
4:30 p.m.
[SCIMAT.DOC]

PRESIDENTIAL REMARKS: SCIENCE & MATH TEACHING AWARDS
THE ROSE GARDEN
TUESDAY, OCTOBER 24, 1989
[TIME]

[[Welcome to the White House! Before we get started, I thought we ought to have a moment of silence: in memory of those brave substitute teachers back home.

Sorry if I'm a little late -- I was just in the Oval Office, trying to balance a few quadratic equations... [PAUSE] If only balancing the budget were that easy...]]

Well, because of the profession you've chosen, a few of you here today may struggle with your **own** budget deficits. [[And you don't even have someone like Dick Darman to help you out...]]

But by accepting the less tangible rewards of teaching -- by committing yourselves to excellence on the front lines of American education -- you represent our best hope for the future.

For that reason, it's a great honor to have you here today.

In a time of real concern about the quality of education in America, I think too many have lost sight of the remarkable accomplishments of this nation's schools -- particularly in science and mathematics.

Those accomplishments happen quietly. Every day. Student by student. Nobody issues a press release. But for every student whose outlook and understanding of the world are transformed by your efforts, the **world** is transformed.

So many Americans are fortunate to remember a teacher who made a difference. It might have been the teacher who brought math to life -- explaining ratios by using the gears of a bicycle. Maybe it was a teacher who revealed the powerful drama in the life of a single cell -- or who sparked speculation about the expansion of the universe.

[[Of course, that can be a little scary. I've heard about a Physics professor whose thick German accent complicated the issue. When he said, "The universe has a finitely addable mass," it sounded like, "Das universe is an invitingly edible mess."]]

Today the link between science and technology, and our standard of living, is stronger than ever. We find ourselves at a pivotal moment: At a time when our international position in certain key industries is being challenged, we face impending shortages of qualified scientists and engineers. So your work is helping us meet a crucial need -- a **national** need.

You've all heard the surveys about American students' performance in scientific knowledge, compared to their peers around the world. But you're not just complaining about it -- you're **doing** something about it.

To those who bewail the current state of math and science education, I'd point to the many success stories that you -- and the outstanding teachers across the country you represent -- are producing in classrooms of every kind.

Last July a high school student from Denver named Steven Gubser won the 20th International Physics Olympiad in Warsaw.

When the United States began competing in the tournament in 1986, many felt that our students would be humiliated by students from Europe and the Far East. But our teams have consistently distinguished themselves -- capped by this gold medal performance.

This is the standard of excellence that American students and teachers can achieve -- and should aspire to.

[[Of course, when I was in school, I knew a few outstanding students. I had a friend once who was **so** smart, he knew how to convert meters to gallons... [PAUSE] In his head.

A lot of us also get insights into the workings of the scientific community from those Gary Larson cartoons -- like the one where Einstein discovers that Time is actually Money.]]

When I met with the nation's governors in Charlottesville last month, they told me -- as the business community continues to tell me -- that a clear concensus is emerging about the crucial importance of math and science education for the near future.

That's why we're working to set national goals for math and science education -- and we will be looking to you for counsel on those goals, and the steps will attain them.

Admiral Watkins just held an outstanding conference out in California on math and science education. Let me encourage you to work with him, and with the nation's governors, to refine our approach to math and science education.

Now, not every student will be a Physics Olympian, or make a career as a scientist. But growing numbers will have jobs based on new technologies. Farm workers, producing genetically engineered crops... auto workers, involved with robotics, cybernetic systems and electronic controls... service people, maintaining computers and telecommunications systems.

New skills, and the ability to learn them quickly, will be crucial their future -- and America's future. But even more fundamentally, those who **don't** choose technical careers will need enough scientific and mathematical understanding to ensure that technology is used wisely: for the benefit of the country, and the whole of humanity.

The founders of our republic had in mind an ideal -- of a literate and informed citizenry -- that goes all the way back to Cicero, when he claimed that he could explain Greek science and philosophy to his fellow Romans in ordinary Latin terms.

That was no empty threat. It was essential to the possibility of democracy. Cicero's ideal of education and discourse in a republic was behind Thomas Jefferson's thinking, as he wrote the Declaration of Independence -- and it still stands as one of the prime responsibilities of democracy in America. A responsibility you're helping us fulfill.

Almost every advance in science means making choices -- weighing benefits against costs and risks. Since it is ultimately the public, not the specialists, who make these

decisions in a democracy, in the future we will need a citizenry with an unprecedented level of technological literacy.

You are providing that kind of literacy -- because you understand that knowledge empowers. Cynics may say that teaching won't move the world. But we know better.

Galileo once found himself fighting the powers of ignorance, when he was forced to publicly renounce his belief that the world turned around the sun. He did so -- but he bravely proclaimed at the end of his recantation, "And yet, the earth does move."

Excellence in teaching may not move the world right away -- but it's one of the surest ways to move it in the right direction. And it places each one of you among the world's foremost movers and shakers.

For that I thank you. God bless you. And God bless the work you do.

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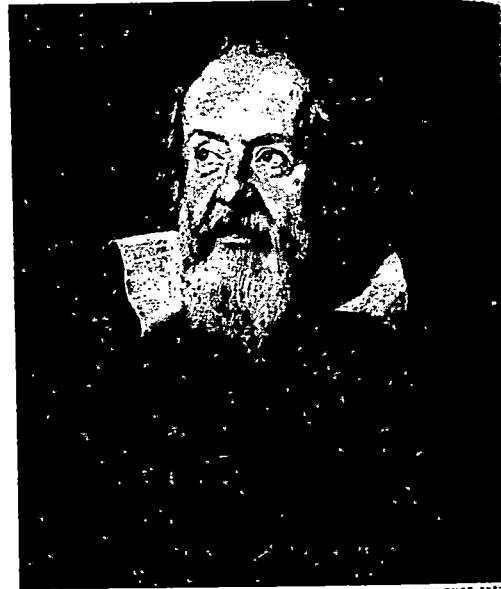
GALILEO, gä-lä-lä'ō (1564-1642), Italian astronomer, physicist, and mathematician, who initiated the scientific revolution of the 17th century in Italy. Galileo linked physics and astronomy with mathematics rather than with traditional philosophy. While he is best known for his writings on astronomy and for his conflict with authority over the issue of the freedom of scientific inquiry, his *Discourses and Mathematical Demonstrations Relating to Two New Sciences* (1638) constitutes his major contribution to science. In it he correctly defined uniform acceleration, set forth the laws of falling bodies, developed the mathematical theory of projectile motion, and expressed numerous fruitful ideas about sound, heat, and light, the relation of mathematics to physics, the role of experiment, and the problems of infinitesimals in the analysis of matter and of motion.

Early Life and Work. Galileo Galilei was born in Pisa on Feb. 15, 1564. His father, Vincenzio Galilei, was a Florentine patrician of slender means who taught music and wrote against the prevailing abstract, numerical theories of harmony. Galileo was educated by a private tutor and by the Camaldolese monks of Vallombrosa and in 1581 entered the University of Pisa as a medical student. Two years later he began studying mathematics under a family friend, Ostilio Ricci. Galileo left the university without a degree in 1585, having developed little interest in medicine. He began to apply mathematics to physics, producing some theorems on the centers of gravity of solid bodies and a treatise on the hydrostatic balance. He became interested in the uniform beating of pendulums and the speeds of descent of bodies in air and in water. In 1589 he was appointed to the chair of mathematics at Pisa, after an unsuccessful attempt to obtain a similar post at Bologna, and spent the next two decades as a university professor.

Physics before Galileo was treated as a branch of Aristotelian philosophy and not as an experimental science. Heavy bodies were supposed to fall at speeds proportional to their weights, seeking to reach their natural place, which was the center of the universe. Thrown bodies supposedly were kept in motion either by some property of the air or by a temporary force put into them by the thrower. Medieval attempts to apply mathematics to motion, though highly ingenious, remained abstract and did not give rise to a new physics that was separate from philosophy. In the 16th century, Archimedes' works were published, giving mathematical laws for static problems, but problems of motion were still not solved mathematically.

About 1590, Galileo wrote a treatise on motion in which he disputed nearly every assumption of Aristotelian physics. He held the view that bodies composed of the same material fall with the same speed through a given medium regardless of their weights. In support he used arguments based on the principle of Archimedes. He offered a new proof for equilibrium on inclined planes, reducing this to the law of the lever, and then tried to deduce from it the speeds of bodies moving on inclined planes.

Galileo disputed Aristotle's division of all motions into "natural" and "forced," asserting that there are also "neutral" motions exemplified by rotating spheres and motions along horizontal planes. For projectile motions he adopted the medieval idea of an "impressed force" that wasted away with motion, whereas Aristotle had



ALINARI-ART REFERENCE BUREAU

GALILEO, whose theories and experiments were basic to the development of astronomy and physics.

held the view that projectiles were moved by the medium. Galileo polished this anti-Aristotelian treatise for publication but never published it, probably because he found that he could not reconcile his proposed rules for motion on inclined planes with observation, having neglected acceleration in his early studies.

By the time his first contract expired, in 1592, Galileo had offended his colleagues by disputing against Aristotle and in other ways. It is said that he demonstrated from the Leaning Tower of Pisa, in view of students and professors, that speed and weight were not related the way Aristotle believed. Later that year Galileo moved to the University of Padua, where freedom of opinion was protected by the Venetian government. There he wrote a treatise on mechanics for his private pupils, which was widely circulated in manuscript copies, and he gave lectures on geometry and astronomy.

Galileo was not much interested in astronomy in his early years. To satisfy the curriculum, designed chiefly to teach medical students, the elements of astronomy for use in medicine, astrology, he based his lectures on a medieval astronomical treatise and, in alternate years, on Ptolemaic planetary theory. In 1597, however, he received copies of a Copernican book published by Kepler. In the Copernican system of astronomy, the earth is removed from its traditional stationary position at the center of the universe and is treated as a planet that rotates on its axis daily and revolves around the sun annually. Galileo wrote to Kepler that he preferred that theory (though not openly) because it enabled him to explain some terrestrial phenomena—this meant the tides, which later became his main argument for the earth's double motion. In the same year he developed a useful mathematical instrument, the proportional compass, which he manufactured for sale to augment his income. Soon afterward he became interested in heat and devised a crude thermometer. Through the work of the English



GALILEO AND MILTON in 1638. (

physicist William Gilbert in magnetism. At Padua, Galileo, who bore a heavy financial obligation of his father, was helped by the dowry help from his young musician who later became Galileo. Astronomical work in astronomy was a source of controversy. He used it to challenge Aristotle's doctrine of the elements, which was a source of philosophy. In 1606, Galileo gave an account of his work, which was quickly published in 1607. His interest was in motion, on which he worked in medicine. In Holland an instrument for distant objects was at once to be made so well that it was able to press upon the telescope of his rivals. In his workshop with Galileo continued early in 1610 he discovered that many new things. He published *Sidereus nuncius*, a sensational work about the satellites of Jupiter, which was not Galileo's interest in

VOLUME 12

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THE PRESIDENTIAL AWARDS FOR EXCELLENCE IN SCIENCE AND MATHEMATICS TEACHING:

PROPOSED REMARKS FOR PRESIDENT BUSH

We are here today to honor 112 individuals who have excelled at one of this nation's most vital and ~~unappreciated~~ ^{yet} tasks: preparing the generation of scientists and engineers who will lead us into the 21st century.

The writer Horace Judson has said that science is this century's art. In that sense, you are the teachers of tomorrow's artists. Many of you have turned down lucrative jobs in private industry for the much less tangible rewards of teaching. Yet you have created something far more valuable--you have helped create the future for all of us.

I think that many people, and especially many scientists and engineers, remember one particular teacher who pointed them down their life's course. It might have been the one teacher who took the time to demonstrate an experiment in physics, or the teacher who revealed the intricate beauty of a living organism, or the teacher who pointed to the stars and inspired questions about what those stars were like, or the teacher who showed that math was not only challenging but fun, or even the teacher who mixed a few chemicals in the laboratory with explosive results. These are the people who make a difference in the world, who leave the world a better place than they found it.

In a time of concern about the quality of education in America, I think many people have lost sight of the incredible accomplishments of this nation's schools, particularly in science and mathematics. But you only have to visit one of the re-creations of our country's colonial past--in Williamsburg, Virginia, or Sturbridge, Massachusetts--to see how completely Amer-

ican science and technology have changed our lives. Electric lights, telephones, airplanes, computers--all are largely the product of American ingenuity, and all have had a profound effect on how we live.

Today, the link between science and technology and our standard of living has become even stronger. For decades the United States was the world's leader in science and technology. But recently, in certain fields, we have begun to fall behind. Our international competitiveness in certain key industries has weakened, and we have lost important markets to foreign competitors. More worrisome still, tests of scientific knowledge have shown that American students consistently rank near the bottom compared with students in other countries.

But for all those who would lament the current state of science education, I would point to the many success stories that you and the teachers you represent have produced. Last July a high school student from Denver named Steven Gubser won the 20th International Physics Olympiad in Warsaw, Poland, scoring 46-1/3 out of a possible 50 points. When the United States began competing in the tournament in 1986, many people felt that our students would be humiliated by students from Europe and the Far East. But our teams have consistently distinguished themselves, capped by this remarkable gold medal performance.

This is the kind of thing that American students and teachers are capable of. But I'm sure that you more than anyone are aware of the many challenges that lie before us.

First, we need to produce many more scientists and engineers than we are now producing. The National Science Foundation has estimated that in the 1990s we will face a shortage of hundreds of thousands of computer scientists, aeronautical engineers, chemical engineers, and other kinds of technical per-

sonnel. Today, only 6 percent of our bachelor's degrees are in engineering, versus 20 percent in Japan and 37 percent in Germany.

Women and minorities also remain grossly underrepresented in science and engineering. These groups represent a wellspring of untapped creativity and potential that could produce tremendous advances in the years ahead.

We also need to give an equally good, but different, education to those whose jobs will be heavily involved with technology. As examples, we might think of farm workers using new biological pesticides or new genetically engineered crops; auto workers using complex robots and electronic controls; service people keeping computers and telecommunications systems operating; laboratory technicians running medical tests. These people are all crucial in our technological age. Yet the paths to these jobs are often not through the traditional four-year college route. These students need and deserve an appropriate education in science and technology, often delivered in conjunction with vocational education teachers.

Finally, we need to teach science and mathematics to people who do not go on to become scientists or engineers. The knowledge and attitudes of the general public will be crucial in ensuring that the United States maintains a position of world leadership in science and technology. Those of us who are not scientists or engineers need a level of scientific and mathematical understanding that will enable us to ensure that technology will be used wisely for the benefit of the country and the whole of humanity. Almost every advance in science has some price and therefore entails a balancing of costs and benefits. Since it is ultimately the public, and not the specialists, who makes these decisions, we need a citizenry with a level of technological literacy that will help us cope with the choices that science creates.

We must ask our science and math teachers to send every student out of school with some understanding of the crucial scientific and technical issues of the day--genetic engineering, superconductivity, nuclear fission, the greenhouse effect, waste disposal--things that are in the newspapers every day. In fact, it might interest you to know that nearly half the bills that come before Congress contain a substantial component of science and technology. So if you wouldn't mind stopping on the hill sometime during your week in Washington and educating a few Congressmen, I'm sure they would appreciate it.

What this adds up to is that every student in America today needs a good education in science and mathematics. You have been the leaders in demonstrating how outstanding teaching skills, an interest in science and mathematics, and a concern with the profession of teaching can meet the diverse needs of our population. But you have to continue to exert that leadership. I would challenge you to keep working with other teachers, with school administrators, with employers, with publishers, with university faculty to develop a mix of science and mathematics education that will prepare our entire population to meet the technological challenges of the next century. It's a tall order, but you are the kind of people who can fill it.

FACT SHEET

What are the Presidential Awards for Excellence in Science and Mathematics Teaching?

The awards represent the Nation's highest honor for teachers of mathematics and science in grades 7-12. The award consists of a certificate, a \$7,500 grant to the recipient's school, and a week of activities in Washington during which each teacher receives an award certificate signed by the President. The Awardees also receive a generous selection of gifts from private sector contributors.

How was it established?

The award was established by President Reagan and the Congress in 1983 by P.L. 98-377 and amended in 1988 by P.L. 100-570.

How many recipients are honored?

There will be 112 recipients in 1989, representing one science and one mathematics teacher chosen from each of the 50 states, the District of Columbia, Puerto Rico, DoD Dependent Schools, U.S. Territories, and four carry over recipients from 1988.

How are recipients selected?

Nominations may come from any source and are sent to the state directors of the National Council of Teachers of Mathematics or the Council of State Science Supervisors for consideration. Two mathematics teachers and two science teachers from the 50 states, the District of Columbia, U.S. Territories, Puerto Rico, and DoD Dependent Schools are selected for consideration by a National Selection Board whose members are nominated by various mathematics and science organizations. The Committee selects its candidates from among those nominated and transmits its recommendations to the Assistant to the President for Science and Technology for approval and forwarding to the President for final decision. The National Science Foundation provides staff and administrative support for the Selection Board.

What is the selection criteria?

Award recipients are chosen on the basis of the excellence of their teacher performance and consideration of their background and experience including their formal education, continuing education activities, teaching experience, as well as professional and non-professional activities related to their role as a teacher. During the selection process, they are asked to describe their perception of their role and mission as mathematics or science teachers, their most satisfying accomplishment, and their profession. They are also asked to identify one critical problem related to teaching science or mathematics in their school and discuss ways this problem might be resolved. In addition, they are required to submit a plan for the use of the \$7,500 grant to their school. Four letters of support from colleagues, students, former students, parents, or supervisors are requested from each applicant.

Draft

Office of the Press Secretary

For Immediate Release

October 24, 1989

1989 Presidential Awards for Excellence
in Science and Mathematics Teaching

Dr. D. Allan Bromley, The Assistant to the President for Science and Technology announced the President's selection of 112 teachers to receive the 1989 Presidential Awards for Excellence in Science and Mathematics Teaching. The awards, established by President Reagan in 1983, represent the Nation's highest honor for teachers of science and mathematics in grades 7-12. Dr. Bromley said, "No profession is more important to the future of this country than yours -- you have both the President's and my warmest congratulations and appreciation...."

The 112 awardees, one science and one mathematics teacher from each of the 50 States, the District of Columbia, Puerto Rico, the Department of Defense Dependents Schools, and the following U.S. Territories as a group -- Guam, American Samoa, The Commonwealth of Northern Marianas, and the Virgin Islands, receive a certificate, a \$7,500 National Science Foundation grant to each recipient's school, and a week in Washington, D.C., to participate in seminars and ceremonies honoring them for their outstanding contributions to the education of our Nation's youth.

Nominations from students, colleagues, parents, supervisors, and others are sent to the State directors of the National Council of Teachers of Mathematics or the Council of State Science Supervisors for consideration. Two mathematics teachers and two science teachers from the States, the District of Columbia, Puerto Rico, the DoD Dependents Schools, and U.S. Territories are selected for consideration by a national selection committee, whose members are nominated by several mathematics and science organizations. The committee selects its candidates from among these nominations and transmits its recommendations to the President for final decision.

Nominees are judged on their excellence of teacher performance, their ability to improve their students' understanding of science or mathematics, on their continued interest and growth in their field of study, and on their involvement in professional areas of teaching. The nominees are asked to identify one critical problem related to teaching science and mathematics in their schools and to discuss ways the problem might be resolved. In addition, they are required to submit a plan for the use of the \$7,500 grant to their school.

Dr. D. Allan Bromley, Assistant to the President for Science and Technology, and Erich Bloch, Director, National Science Foundation, presented award at the White House today.

For further information, please contact
Jackeline J. Clawson, (202) 456-2735

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(Lange/Martin)
October 19, 1989
6:30 p.m.
[SCIMAT.DOC]

PRESIDENTIAL REMARKS: SCIENCE & MATH TEACHING AWARDS
THE ROSE GARDEN
TUESDAY, OCTOBER 24, 1989
10:00 A.M.

[[Welcome to the White House! Sorry if I'm a little late. I was just in the Oval Office, trying to solve a few quadratic equations... [PAUSE] Even tougher than balancing the budget...

Before we get started, I thought we ought to have a moment of silence: in memory of those brave substitute teachers back home.]]

It's a great honor to have you here today. You've taken on one of the nation's most vital, yet too often unappreciated tasks. Because you've committed yourselves to excellence on the front lines of American education, you represent our best hope for the future.

So many Americans remember a special teacher who made a quiet but crucial difference in their lives. It might have been the teacher who brought math to life -- explaining ratios by using the gears of a bicycle. Maybe it was a teacher who revealed the powerful drama in the life of a single cell -- or who sparked speculation about the expansion of the universe.

[[Of course, those of us who haven't been to school in a while get our scientific understanding from those Gary Larson cartoons. Like the one where, after detailed calculations, Einstein discovers that Time is actually Money.]]

You've all seen the surveys about American students' poor performance in scientific knowledge, compared to their peers around the world. It's a serious problem. But you're not just complaining about it -- you're **doing** something about it.

You're showing that excellence is not just possible in American education -- it ought to be the norm. You and the outstanding teachers across the country you represent are creating centers of excellence in classrooms of every kind -- setting standards for the rest of the country to follow -- and creating exceptional students.

This year a high school student from Denver named Steven Gubser won the 20th International Physics Olympiad in Warsaw. When the United States began competing in the tournament in 1986, some thought that our students wouldn't have a chance against students from Europe and the Far East. But our teams have consistently distinguished themselves -- capped by this gold medal performance.

This is the standard of excellence that America's students and teachers should aspire to -- and that more can attain.

Our problem is not that we don't have American students excelling at science and math -- we just don't see enough of them.

[[Of course, there were a few outstanding students in my time. I had a friend once who was so smart, he knew how to convert **meters** to **gallons**... [PAUSE] In his **head**.]]

The work of outstanding teachers like yourselves has a profound impact -- not just on the students you teach, but on the nation as a whole. The link between science and technology, and our standard of living, is stronger today than ever before.

At a time when our international position in certain key industries is being challenged, we face impending shortages of qualified scientists and engineers. So your work is helping us meet a crucial need -- a **national** need.

Not every student will be a Physics Olympian, or make a career as a scientist. But growing numbers will have jobs based on new technologies. Farm workers, producing genetically engineered crops. Auto workers, involved with robotics, cybernetic systems, and electronic controls. Service people, maintaining computers and telecommunications systems.

It will be new skills, and the ability to learn them quickly and adapt, that will be crucial to their future -- and America's future.

When I met with the nation's governors in Charlottesville last month, they told me -- as the business community continues to tell me -- that a clear concensus is emerging on the crucial need to improve math and science education in this country.

That's why we're establishing a National Science Scholars Program for top math and science students across the country. And for students of all abilities, we're working to set national goals for math and science education.

We will be looking to you for advice and guidance on those goals -- and the steps we can take, together, to attain them. I want to encourage you to work with this Administration -- and with the Nation's governors -- to refine our approach to math and science education.

All of you, as teachers, know the larger role that education plays in a free society. **Every** student in America -- even those who **don't** choose technical careers -- will need enough scientific and mathematical understanding to make decisions about the technologies of the 21st century.

You understand the importance of a literate and informed citizenry, and you're acting on that understanding. For the sake of every student you teach. Every day.

You know, a few minutes ago, I said that just about all of us can think of special teachers -- teachers that touched our lives forever. But it's also true that the greatest minds in science and mathematics were inspired and directed by teachers of their own.

And that's worth remembering. What you're doing today has the potential to unleash the genius of a new generation.

For all that you've done -- and will continue to do -- I thank you, and congratulate you.

God bless you. And God bless the work you do.

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(Lange/Martin)
October 19, 1989
3:00 p.m.
[SCIMAT.DOC]

PRESIDENTIAL REMARKS: SCIENCE & MATH TEACHING AWARDS
THE ROSE GARDEN
TUESDAY, OCTOBER 24, 1989
[TIME] 10:00 AM

Eric Block
Nat'l Sci
Fdn
Dr. Bromley

[[Welcome to the White House! Sorry if I'm a little late.
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We will be looking to you for advice and guidance on those goals -- and the steps we can take, together, to attain them. I want to encourage you to work with this administration -- and with the nation's governors -- to refine our approach to math and science education. Because we've simply run out of time to waste.

You've all heard the surveys about American students' poor performance in scientific knowledge, compared to their peers around the world. It's a serious problem. But you're not just complaining about it -- you're **doing** something about it.

P. 54 BABA

You're showing that excellence is not just possible in American education -- it can be **expected**. You and the outstanding teachers across the country you represent are creating centers of excellence in classrooms of every kind -- setting standards for the rest of the country to follow -- and creating exceptional students.

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Not every student will be a Physics Olympian -- or make a career as a scientist. But the importance of math and science education goes far beyond that.

Every student in America -- especially those who **don't** choose technical careers -- will need enough scientific and mathematical understanding to see that technology is used wisely: for the benefit of the country, and the whole of humanity.

Jacklyn
Clawson
Mr. Bromley's
office
x2734
and her
draft

That understanding is important, because almost every advance in science means making choices -- weighing benefits against costs and risks. It is ultimately the public, not the specialists, who make these decisions. So in the future, more than ever, technological literacy will determine whether **democracy** continues to be a successful experiment.

Cicero once claimed he could explain Greek science and philosophy to his fellow Romans in everyday terms. He did -- and the ideal of universal education in a republic was born.

That ideal -- of free and informed discourse being central to democracy -- was behind Thomas Jefferson's thinking as he wrote the Declaration of Independence. And today it still stands as one of the principle responsibilities of democracy in America.

The outstanding teachers we honor here today understand the importance of a literate and informed citizenry, for the future of democracy. And each of you are fulfilling that promise for future generations.

For that I thank you -- and congratulate you on your outstanding achievements. God bless you. And God bless the work you do.

#

THE WHITE HOUSE
WASHINGTON

April 6, 1989

MEMORANDUM FOR PPO STAFF

FROM: *PJC* PAM COVINGTON

SUBJECT: Security Briefing

Security Briefings will be held Monday at 4:00 pm and Tuesday at 11:30 am in the Indian Treaty Room of the OEOB, and will last for approximately 45 minutes.

Attendance is MANDATORY!

Please see Amy to sign up for either day.

Everyone must sign-in again at the briefing and George Saunders will use this proof of attendance as part of your security clearance.

Thank you.

Vincent Galante

called

800-255-6734

She found the

Fun side —

stroke cont: ^{Oct 9, 10} Adams & his first book a math & science conf. in Calif.

THE PRESIDENTIAL AWARDS FOR EXCELLENCE IN SCIENCE AND MATHEMATICS TEACHING:

Educ. pkg. - ^{has} math & sci. cont.

PROPOSED REMARKS FOR PRESIDENT BUSH

Best alternative is actually money

Gov's, bus. comm. agree importance
↓
plan to set national goals for math & sci. achiev. looking to you
Professors of Educ. pkg. ✓
Westinghouse science award
Self-dep. humor

[Vertical scribbles]

We are here today to honor 112 individuals who have excelled at one of this nation's most vital and ^{yet} unappreciated tasks: preparing the generation of scientists and engineers who will lead us into the 21st century.

The writer Horace Judson has said that science is this century's art. In that sense, you are the teachers of tomorrow's artists. Many of you have turned down lucrative jobs in private industry for the much less tangible rewards of teaching. Yet you have created something far more valuable--you have helped create the future for all of us.

I think that many people, and especially many scientists and engineers, remember one particular teacher who pointed them down their life's course. It might have been the one teacher who took the time to demonstrate an experiment in physics, or the teacher who revealed the intricate beauty of a living organism, or the teacher who pointed to the stars and inspired questions about what those stars were like, or the teacher who showed that math was not only challenging but fun, or even the teacher who mixed a few chemicals in the laboratory [with explosive results.] These are the people who make a difference in the world, who leave the world a better place than they found it.

*He like a single cell
↓
expans. univ.
expanding out, horizons...*

Start to be intel...

In a time of concern about the quality of education in America, I think many people have lost sight of the incredible accomplishments of this nation's schools, particularly in science and mathematics. But you only have to visit one of the re-creations of our country's colonial past--in Williamsburg, Virginia, or Sturbridge, Massachusetts--to see how completely Amer-

*who as scientist
how a kid could convert ¹⁰⁰ to gallons [D.H.S.E.] in his head!*

X

ican science and technology have changed our lives. Electric lights, telephones, airplanes, computers--all are largely the product of American ingenuity, and all have had a profound effect on how we live.

Today, the link between science and technology and our standard of living has become even stronger. For decades the United States was the world's leader in science and technology. But recently, in certain fields, we have begun to fall behind. Our international competitiveness in certain key industries has weakened, and we have lost important markets to foreign competitors. More worrisome still, tests of scientific knowledge have shown that American students consistently rank near the bottom compared with students in other countries.

But for all those who would lament the current state of science education, I would point to the many success stories that you and the teachers you represent have produced. Last July a high school student from Denver named Steven Gubser won the 20th International Physics Olympiad in Warsaw, Poland, scoring $46\frac{1}{3}$ out of a possible 50 points. When the United States began competing in the tournament in 1986, many people felt that our students would be humiliated by students from Europe and the Far East. But our teams have consistently distinguished themselves, capped by this remarkable gold medal performance.

This is the kind of thing that American students and teachers are capable of. But I'm sure that you more than anyone are aware of the many challenges that lie before us.

First, we need to produce many more scientists and engineers than we are now producing. The National Science Foundation has estimated that in the 1990s we will face a shortage of hundreds of thousands of computer scientists, aeronautical engineers, chemical engineers, and other kinds of technical per-

sonnel. Today, only 6 percent of our bachelor's degrees are in engineering, versus 20 percent in Japan and 37 percent in Germany.

*Helping us meet
A crucial, national need.*

Women and minorities also remain grossly underrepresented in science and engineering. These groups represent a wellspring of untapped creativity and potential that could produce tremendous advances in the years ahead.

We also need to give an equally good, but different, education to those whose jobs will be heavily involved with technology. As examples, we might think of farm workers using new biological pesticides or new genetically engineered crops; auto workers using complex robots and electronic controls; service people keeping computers and telecommunications systems operating; laboratory technicians running medical tests. These people are all crucial in our technological age. Yet the paths to these jobs are often not through the traditional four-year college route. These students need and deserve an appropriate education in science and technology, often delivered in conjunction with vocational education teachers.

Finally, we need to teach science and mathematics to people who do not go on to become scientists or engineers. The knowledge and attitudes of the general public will be crucial in ensuring that the United States maintains a position of world leadership in science and technology. Those of us who are not scientists or engineers need a level of scientific and mathematical understanding that will enable us to ensure that technology will be used wisely for the benefit of the country and the whole of humanity. Almost every advance in science has some price and therefore entails a balancing of costs and benefits. Since it is ultimately the public, and not the specialists, who makes these decisions, we need a citizenry with a level of technological literacy that will help us cope with the choices that science creates.

We must ask our science and math teachers to send every student out of school with some understanding of the crucial scientific and technical issues of the day--genetic engineering, superconductivity, nuclear fission, the greenhouse effect, waste disposal--things that are in the newspapers every day. In fact, it might interest you to know that nearly half the bills that come before Congress contain a substantial component of science and technology. So if you wouldn't mind stopping on the hill sometime during your week in Washington and educating a few Congressmen, I'm sure they would appreciate it.

What this adds up to is that every student in America today needs a good education in science and mathematics. You have been the leaders in demonstrating how outstanding teaching skills, an interest in science and mathematics, and a concern with the profession of teaching can meet the diverse needs of our population. But you have to continue to exert that leadership. I would challenge you to keep working with other teachers, with school administrators, with employers, with publishers, with university faculty to develop a mix of science and mathematics education that will prepare our entire population to meet the technological challenges of the next century. It's a tall order, but you are the kind of people who can fill it.

FACT SHEET

What are the Presidential Awards for Excellence in Science and Mathematics Teaching?

The awards represent the Nation's highest honor for teachers of mathematics and science in grades 7-12. The award consists of a certificate, a \$7,500 grant to the recipient's school, and a week of activities in Washington during which each teacher receives an award certificate signed by the President. The Awardees also receive a generous selection of gifts from private sector contributors.

How was it established?

The award was established by President Reagan and the Congress in 1983 by P.L. 98-377 and amended in 1988 by P.L. 100-570.

How many recipients are honored?

There will be 112 recipients in 1989, representing one science and one mathematics teacher chosen from each of the 50 states, the District of Columbia, Puerto Rico, DoD Dependent Schools, U.S. Territories, and four carry over recipients from 1988.

How are recipients selected?

Nominations may come from any source and are sent to the state directors of the National Council of Teachers of Mathematics or the Council of State Science Supervisors for consideration. Two mathematics teachers and two science teachers from the 50 states, the District of Columbia, U.S. Territories, Puerto Rico, and DoD Dependent Schools are selected for consideration by a National Selection Board whose members are nominated by various mathematics and science organizations. The Committee selects its candidates from among those nominated and transmits its recommendations to the Assistant to the President for Science and Technology for approval and forwarding to the President for final decision. The National Science Foundation provides staff and administrative support for the Selection Board.

What is the selection criteria?

Award recipients are chosen on the basis of the excellence of their teacher performance and consideration of their background and experience including their formal education, continuing education activities, teaching experience, as well as professional and non-professional activities related to their role as a teacher. During the selection process, they are asked to describe their perception of their role and mission as mathematics or science teachers, their most satisfying accomplishment, and their profession. They are also asked to identify one critical problem related to teaching science or mathematics in their school and discuss ways this problem might be resolved. In addition, they are required to submit a plan for the use of the \$7,500 grant to their school. Four letters of support from colleagues, students, former students, parents, or supervisors are requested from each applicant.

Draft

Office of the Press Secretary

For Immediate Release

October 24, 1989

1989 Presidential Awards for Excellence
in Science and Mathematics Teaching

Dr. D. Allan Bromley, The Assistant to the President for Science and Technology announced the President's selection of 112 teachers to receive the 1989 Presidential Awards for Excellence in Science and Mathematics Teaching. The awards, established by President Reagan in 1983, represent the Nation's highest honor for teachers of science and mathematics in grades 7-12. Dr. Bromley said, "No profession is more important to the future of this country than yours -- you have both the President's and my warmest congratulations and appreciation...."

The 112 awardees, one science and one mathematics teacher from each of the 50 States, the District of Columbia, Puerto Rico, the Department of Defense Dependents Schools, and the following U.S. Territories as a group -- Guam, American Samoa, The Commonwealth of Northern Marianas, and the Virgin Islands, receive a certificate, a \$7,500 National Science Foundation grant to each recipient's school, and a week in Washington, D.C., to participate in seminars and ceremonies honoring them for their outstanding contributions to the education of our Nation's youth.

Nominations from students, colleagues, parents, supervisors, and others are sent to the State directors of the National Council of Teachers of Mathematics or the Council of State Science Supervisors for consideration. Two mathematics teachers and two science teachers from the States, the District of Columbia, Puerto Rico, the DoD Dependents Schools, and U.S. Territories are selected for consideration by a national selection committee, whose members are nominated by several mathematics and science organizations. The committee selects its candidates from among these nominations and transmits its recommendations to the President for final decision.

Nominees are judged on their excellence of teacher performance, their ability to improve their students' understanding of science or mathematics, on their continued interest and growth in their field of study, and on their involvement in professional areas of teaching. The nominees are asked to identify one critical problem related to teaching science and mathematics in their schools and to discuss ways the problem might be resolved. In addition, they are required to submit a plan for the use of the \$7,500 grant to their school.

Dr. D. Allan Bromley, Assistant to the President for Science and Technology, and Erich Bloch, Director, National Science Foundation, presented award at the White House today.

For further information, please contact
Jackeline J. Clawson, (202) 456-2735

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(Lange/Martin)
October 19, 1989
6:30 p.m.
[SCIMAT.DOC]

PRESIDENTIAL REMARKS: SCIENCE & MATH TEACHING AWARDS
THE ROSE GARDEN
TUESDAY, OCTOBER 24, 1989
10:00 A.M.

[[Welcome to the White House! Sorry if I'm a little late.
I was just in the Oval Office, trying to solve a few quadratic
equations... [PAUSE] Even tougher than balancing the budget...

Before we get started, I thought we ought to have a moment
of silence: in memory of those brave substitute teachers back
home.]]

It's a great honor to have you here today. You've taken on
one of the nation's most vital, yet too often unappreciated
tasks. Because you've committed yourselves to excellence on the
front lines of American education, you represent our best hope
for the future.

So many Americans remember a special teacher who made a
quiet but crucial difference in their lives. It might have been
the teacher who brought math to life -- explaining ratios by
using the gears of a bicycle. Maybe it was a teacher who
revealed the powerful drama in the life of a single cell -- or
who sparked speculation about the expansion of the universe.

[[Of course, those of us who haven't been to school in a
while get our scientific understanding from those Gary Larson
cartoons. Like the one where, after detailed calculations,
Einstein discovers that Time is actually Money.]]

You've all seen the surveys about American students' poor performance in scientific knowledge, compared to their peers around the world. It's a serious problem. But you're not just complaining about it -- you're **doing** something about it.

You're showing that excellence is not just possible in American education -- it ought to be the norm. You and the outstanding teachers across the country you represent are creating centers of excellence in classrooms of every kind -- setting standards for the rest of the country to follow -- and creating exceptional students.

This year a high school student from Denver named Steven Gubser won the 20th International Physics Olympiad in Warsaw. When the United States began competing in the tournament in 1986, some thought that our students wouldn't have a chance against students from Europe and the Far East. But our teams have consistently distinguished themselves -- capped by this gold medal performance.

This is the standard of excellence that America's students and teachers should aspire to -- and that more can attain.

Our problem is not that we don't have American students excelling at science and math -- we just don't see enough of them.

[[Of course, there were a few outstanding students in my time. I had a friend once who was so smart, he knew how to convert **meters** to **gallons**... [PAUSE] In his **head**.]]

The work of outstanding teachers like yourselves has a profound impact -- not just on the students you teach, but on the nation as a whole. The link between science and technology, and our standard of living, is stronger today than ever before.

At a time when our international position in certain key industries is being challenged, we face impending shortages of qualified scientists and engineers. So your work is helping us meet a crucial need -- a **national** need.

Not every student will be a Physics Olympian, or make a career as a scientist. But growing numbers will have jobs based on new technologies. Farm workers, producing genetically engineered crops. Auto workers, involved with robotics, cybernetic systems, and electronic controls. Service people, maintaining computers and telecommunications systems.

It will be new skills, and the ability to learn them quickly and adapt, that will be crucial to their future -- and America's future.

When I met with the nation's governors in Charlottesville last month, they told me -- as the business community continues to tell me -- that a clear concensus is emerging on the crucial need to improve math and science education in this country.

That's why we're establishing a National Science Scholars Program for top math and science students across the country. And for students of all abilities, we're working to set national goals for math and science education.

We will be looking to you for advice and guidance on those goals -- and the steps we can take, together, to attain them. I want to encourage you to work with this Administration -- and with the Nation's governors -- to refine our approach to math and science education.

All of you, as teachers, know the larger role that education plays in a free society. **Every** student in America -- even those who **don't** choose technical careers -- will need enough scientific and mathematical understanding to make decisions about the technologies of the 21st century.

You understand the importance of a literate and informed citizenry, and you're acting on that understanding. For the sake of every student you teach. Every day.

You know, a few minutes ago, I said that just about all of us can think of special teachers -- teachers that touched our lives forever. But it's also true that the greatest minds in science and mathematics were inspired and directed by teachers of their own.

And that's worth remembering. What you're doing today has the potential to unleash the genius of a new generation.

For all that you've done -- and will continue to do -- I thank you, and congratulate you.

God bless you. And God bless the work you do.

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Andrews and McMeel

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FAX TRANSMITTAL COVER LETTER

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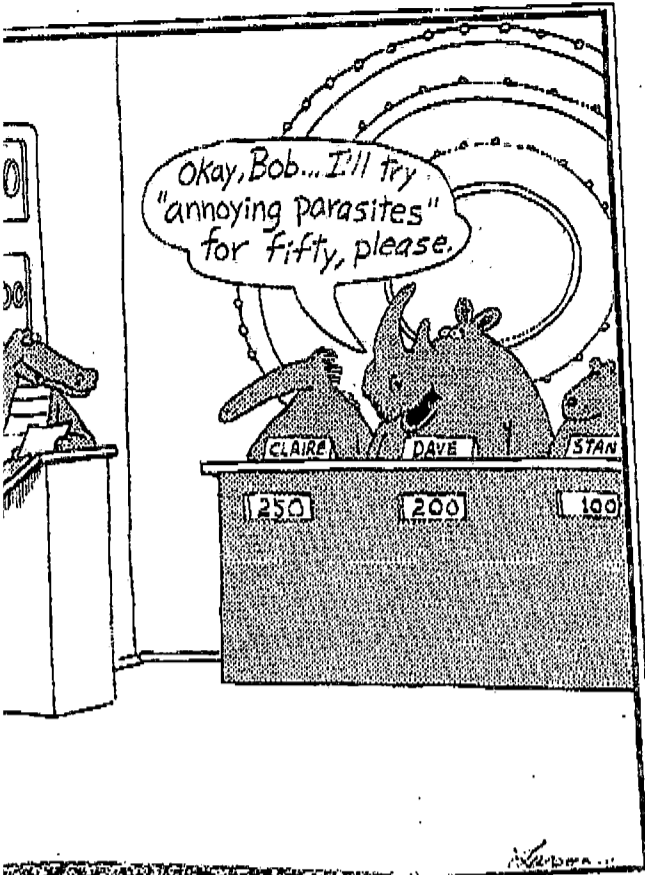
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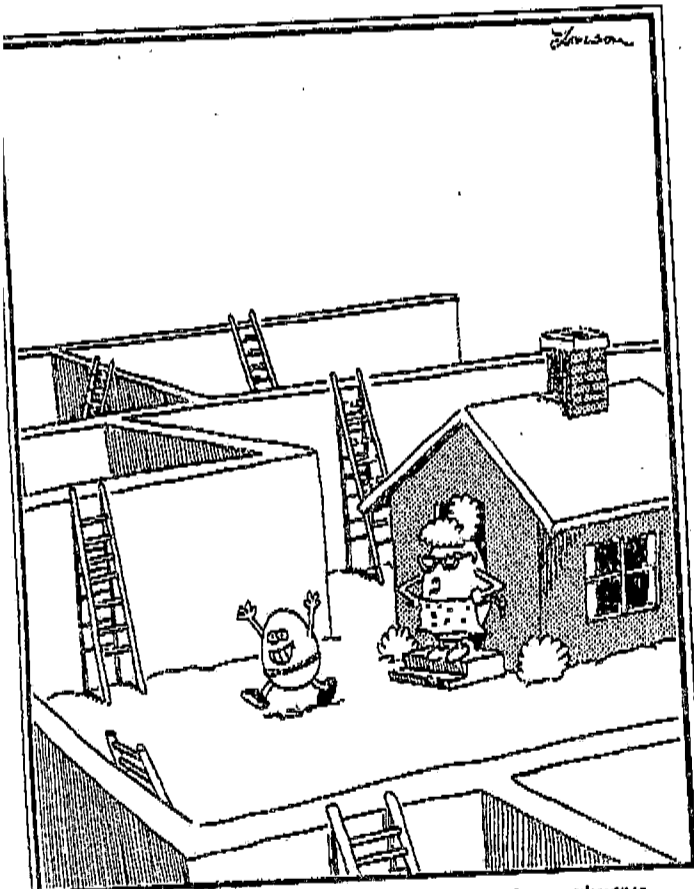
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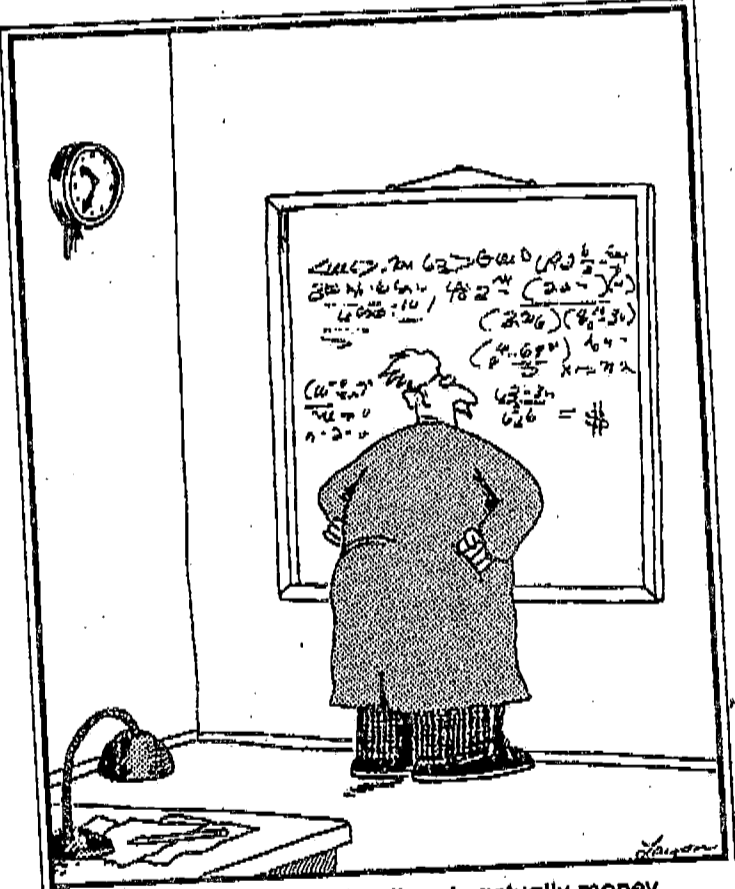
Animal game shows



"He's using blanks—pass it on."



"Be back by supper time, Hump ... and, as always, you be careful."



Einstein discovers that time is actually money.