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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:	Correspondence Files

OA/ID Number:	62014
Folder ID Number:	62014-002

Folder Title:
Invitation: General (4) [2 of 5] [1992]

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"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION DOCUMENT NUMBER: 9201199
ORIGINATOR: 02

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SPEECH: YES NO

FROM: GREENE, J. Morgan: INVENT AMERICA

DATE OF EVENT: 06/16/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: SMITHSONIAN INSTITUTION

TIME OF EVENT: 12:30 P.M.-5:00 P.M.

SUBJECT: AN INVITATION TO BE A JUDGE AT THEIR INVENTION COMPETITION.

****

RSVP: 04/22/92

CONTACT PERSON:

CONTACT NUMBER: 703-684-1836

****

INVITATION ACCEPTED? ~~YES~~ NO

****

COPIES TO: INTERNATIONAL/POL
PHYSICAL SCIENCES

REMARKS: 4/14/92 - Regretted to Jennifer. mn

DATE OF LETTER: 04/06/92 DATE RECEIVED: 04/08/92

FILE: P-INVITATION

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REMARKS:

DATE OF LETTER: 04/06/92 DATE RECEIVED: 04/08/92

FILE: P-INVITATION

1199 INV



April 6, 1992

Dr. Allen Bromely
Assistant to the President & Director
Office of Science & Technology
Old Executive Office Building, Room 360
Washington, D.C. 20506

RECEIVED
92 APR 8 P2:05
MAIL ROOM

Dear Dr. Bromely:

I write to invite you to join a panel of distinguished Americans who will gather at the Smithsonian Institution in Washington, D.C. this June 16, to select the 1992 winners of the INVENT AMERICA! invention competition.

Although tremendously challenging, your task will surely not be without reward! You will delight in the discovery of American ingenuity through the eyes of a child, and you will leave with a deeply renewed faith in our nation's future work force.

Your selection of nine national winners is the grand finale to our annual INVENT AMERICA! year-long classroom education program and student invention competition. Launched in 1987 by then-Vice President George Bush who now serves as honorary chairman, INVENT AMERICA! was established to help children become innovative thinkers by challenging them to create their own inventions to solve everyday problems. Children learn to develop and apply math, science, language arts and creative thinking skills -- the problem solving skills crucial to their ability to successfully meet the challenges of today's highly complex technological world and tomorrow's international workplace.

As a national jurist, you will review the work of 45 of our nation's brightest students who have risen from thousands of local and state competitions to earn the title of regional winners. From that group you will select the nine finalists -- one from each grade, kindergarten through eighth -- who will earn the coveted 1992 national titles. Selection is based on such criteria as an invention's originality and usefulness, clarity and documentation of research, illustration, etc.

To give you an example of the type of inventions you'll see from our nation's youngest Edisons, enclosed are sample copies from previous year's entries. At the actual judging, jurists will see the student's invention model, original entry form and log explaining the research that took place.

While selecting the winners is a lively, informal process and does not require a specific knowledge, skill or technical expertise, it does require a commitment of your time. The program begins that day with a luncheon at 12:30 p.m., to enable you to view the inventions and get acquainted with your fellow jurists.

United States Patent Model Foundation
Courthouse Square • 510 King Street • Suite 420 • Alexandria, VA 22314 • (703) 684-1836

The selection process follows at 1:45 p.m. with a brief session to explain the judging process. Each jurist works at his or her own pace; however to help you anticipate scheduling, plan on being finished by 4:30-5:00 p.m.

Later this summer, along with their parents and teachers, the 45 regional winning students will be honored guests in Washington, D.C. to celebrate National INVENT AMERICA! week. This year, in a time honored tradition, July 19-25, is declared National INVENT AMERICA! week by Congress. The festivities include a display of the students inventions at the Smithsonian Institution and on Capitol Hill. The highlight of the week is the national awards ceremony and the long-awaited announcement of the nine finalists who customarily receive congratulations from President Bush.

INVENT AMERICA! is a program of the nonprofit United States Patent Model Foundation, funded solely by private sector partners in education who are vitally concerned about creating a strong, competent and competitive work force for the 21st century global marketplace. This private sector support, which includes major corporations such as Kmart, Polaroid, Binney & Smith and Pepsi-Cola, provides education materials, teacher training and more than $600,000 in incentives for students, their schools and teachers through the INVENT AMERICA! awards program at the state, regional and national level.

I look forward to your participation as a 1992 INVENT AMERICA! jurist. By joining our panel of nobel laureates, leaders of business, industry, education, science and law, members of Congress, officials from the White House and the Smithsonian Institution, you will help foster a brighter tomorrow by acknowledging and encouraging INVENT AMERICA!'s efforts in "Bringing Bright Ideas Out of Young Minds."

Please respond with a phone call to let us know if you are able to be with us. I promise it will be an experience you will long remember.

Sincerely,

J. Morgan Greene
Chairman

The Chairman of the United States Patent Model Foundation

cordially invites you to participate

as a jurist

in the selection of the national award winners of the

1992 INVENT AMERICA! student invention competition

Tuesday, June 16, 1992

at the

National Museum of American History

Smithsonian Institution

14th and Constitution Avenues, Northwest

Washington, D. C.

Presidential Suite - First Floor

Luncheon at 12:30 p.m.

Judging immediately following

R.S.V.P.
703/684-1836

The favour of your reply is requested

on or before

April 22, 1992

R.S.V.P.
703/684-1836

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01. Form	Student Entry Forms [personal information redacted] (6 pp.)	1991	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: Invitation: General (4) [2 of 5] [1992]

Date Closed:	2/19/2010	**OA/ID Number:**	62014-002
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:**	

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P-3 Release would violate a Federal statute [(a)(3) of the PRA]
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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.

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

(b)(1) National security classified information [(b)(1) of the FOIA]
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(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

INVENT AMERICA!™

GOOD HOUSEKEEPING PRESENTS

BRINGING BRIGHT IDEAS OUT OF YOUNG MINDS

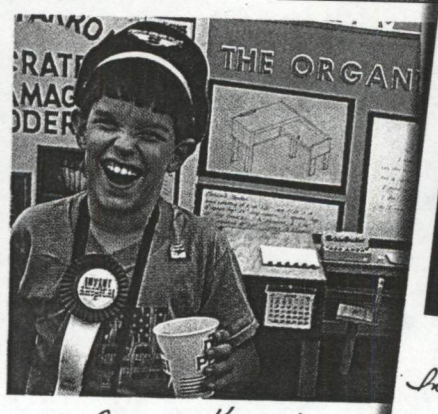
CELEBRATING ITS 5TH YEAR



A Good Housekeeping Special Section



U.S. Treasurer Catalina Villapando
Reeba Daniel and J. Morgan Greene
Invent America! Chairman



James Kovacke
White Lake, South Dakota
inventor of "The Organizer"



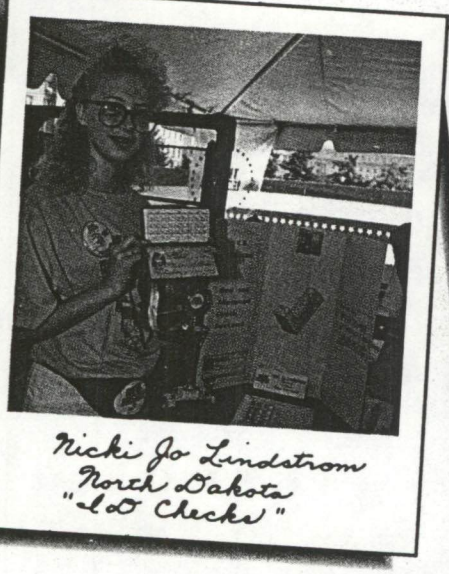
President George Bush
Invent America! Honorary Chairman
and LaSage Wisniewski



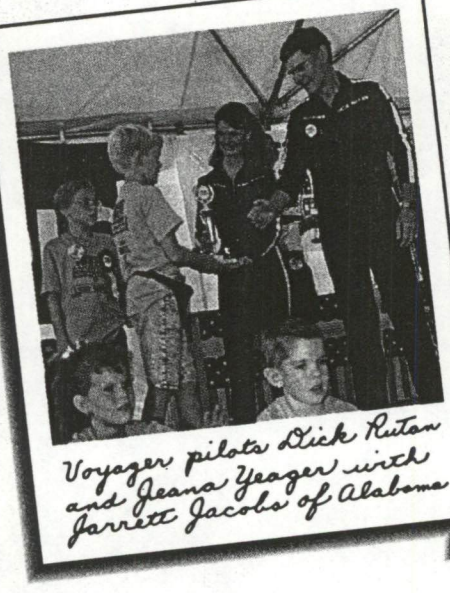
A Good Housekeeping Special Section

REKINDLE THE SPIRIT OF AMERICAN INGENUITY

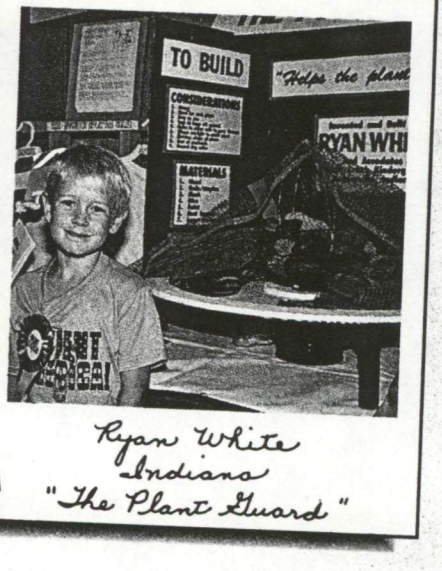
Bringing Bright Ideas out of Young Minds



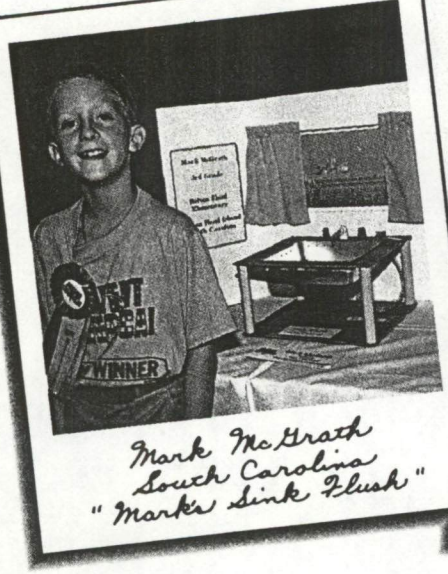
Nicki Jo Lindstrom
North Dakota
"L.O. Checks"



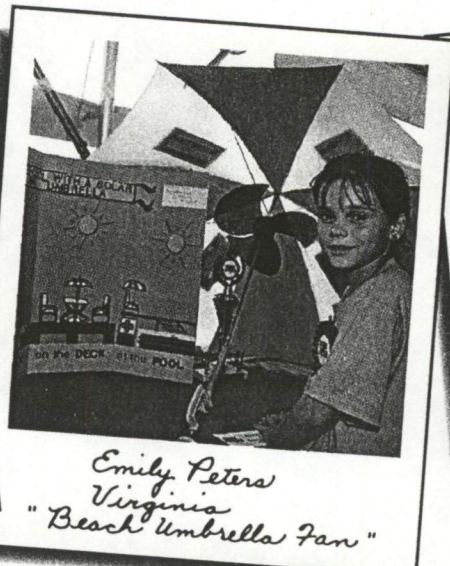
Voyager pilots Dick Rutan and Jeana Yeager with Jarrett Jacobs of Alabama



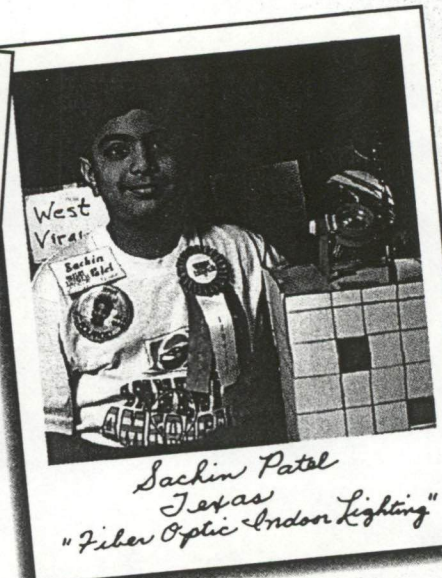
Ryan White
Indiana
"The Plant Guard"



Mark McGrath
South Carolina
"Mark's Sink Flush"



Emily Peters
Virginia
"Beach Umbrella Fan"



Sachin Patel
Texas
"Fiber Optic Indoor Lighting"


PEPSI
INVENT AMERICA!
PEPSI
INVENT AMERICA!
INVENT AMERICA!

INVENT AMERICA! BACKGROUND

"Bringing Bright Ideas Out of Young Minds"

INVENT AMERICA! is a national, nonprofit elementary school program and student invention contest designed to simulate creativity and develop problem solving skills amongst our nation's 31 million students. Children learn math, science, literacy and analytical thinking skills by challenging them to create their own inventions to solve everyday problems. INVENT AMERICA! reaches out to all children, regardless of academic standing, socio-economic background or physical capabilities -- helping to prepare them to meet the needs of our technological, increasingly complex and highly competitive 21st century workplace.

Launched in 1987 by then-vice President George Bush, who now serves as its honorary chairman, INVENT AMERICA! is celebrating its 5th year of "Bringing Bright Ideas Out of Young Minds." It provides free education materials, teacher training and more than $600,000 each year in awards for students, teachers and schools. Major corporate sponsors include Kmart Corporation, Polaroid Corporation, Pepsi-Cola Company, Binney & Smith, Inc. and Kiwanis International, which designates INVENT AMERICA! as a major emphasis program. It receives further support through the annual publication of an INVENT AMERICA! section in Good Housekeeping Magazine and a public service campaign led by award-winning actress Jodie Foster.

INVENT AMERICA! provides educator training through conferences, and its annual GREAT INVENT AMERICA! THINK LINK program, a simultaneous nationwide training program made available at no cost to 50,000 educators by INVENT AMERICA! and it's corporate sponsors. The Think Link is satellite fed from Kmart headquarters to its 2500 stores which provide viewing facilities for the teachers and distribute free INVENT AMERICA! classroom materials, gifts from Polaroid and Binney & Smith, and refreshments by Pepsi-Cola.

Since its inception, more than 30,000 elementary schools have participated in the INVENT AMERICA! program and invention contest which provides awards at the state, regional and national levels, including trips to Washington, DC for students, their parents and teachers to participate in national INVENT AMERICA! week, as designated by Congress. In our nation's capital, the children receive congratulations by the President and compete for national honors determined by a prestigious panel of distinguished jurists.

The award-winning INVENT AMERICA! program has received the widespread support of leaders of education, business and government, and is an example of a successful public/private education partnership at work. It was singled out for recognition by the U.S. Department of Education from more than 140,000 such programs in its report to the President, "America's Schools: Everybody's Business."

INVENT AMERICA! is sponsored and administered by the nonprofit United States Patent Model Foundation. The Foundation is not a part of the U. S. Patent and Trademark Office or any government agency. For more information, call or write INVENT AMERICA! headquarters at: 510 King Street, Suite 420, Alexandria, VA 22314, 703/684-1836.

THE WHITE HOUSE

WASHINGTON

July 24, 1991

I am delighted to extend greetings to everyone gathered in our Nation's Capital for the annual INVENT AMERICA! Week celebration and awards ceremony.

The future of this great nation lies in the hearts and minds of our young people; thus, we do well to nurture and to reward their creativity and their drive. Indeed, if we are to carry on the tradition of inventiveness that has so enriched the United States -- even before the days of Thomas Edison, Samuel Morse, and George Washington Carver -- then we must offer young Americans challenges and opportunities that inspire them to put their ideas to work. That is why the INVENT AMERICA! program is so important, and that is why I salute the students, parents, teachers, and members of the United States Patent Model Foundation who have contributed to this exciting competition.

Congratulations to this year's award winners, who were selected by a panel of distinguished Americans. Your inventions -- and, indeed, those of every participant in the INVENT AMERICA! program -- reflect your gift of imagination and your desire to make the world a better place in which to live. You can be proud of your work.

Barbara joins me in sending best wishes for an exciting week and for every future success. God bless you.

George Bush

United States of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 102th CONGRESS, SECOND SESSION

Vol. 137 WASHINGTON, THURSDAY, JUNE 27, 1991 No. 101

NATIONAL INVENT AMERICA! WEEK

A TRIBUTE TO INVENT AMERICA!

HON. BILL LOWERY
OF CALIFORNIA
IN THE HOUSE OF REPRESENTATIVES

Wednesday, June 26, 1991

Mr. LOWERY of California, Mr. Speaker, it is with great pride that I rise today with six of my distinguished colleagues to introduce legislation designating the week of July 27 through August 2, 1991, as "National INVENT AMERICA! Week." INVENT AMERICA! is a nationwide program which encourages young inventors in kindergarten through 8th grade to develop problem-solving and advanced thinking skills by sponsoring State, regional, and national invention programs and competitions. INVENT AMERICA! seeks to inspire in our youth what has always made America great: innovation, imagination, and excellence.

Stories about how America is losing its technological edge have become all too common in recent years. It is said our students now lag far behind students in Asia and Europe in math and science and that our future as the world's greatest economic power is in jeopardy. To respond to these developments, INVENT AMERICA! was launched in 1987 by Vice President Bush, who now serves as honorary chairman. INVENT AMERICA! is a non-profit foundation enjoying generous support from good corporate citizens like K mart, Polaroid and Pepsi.

INVENT AMERICA! invites students to create, to explore their dreams, and to improve life for themselves and their country. This simple yet brilliant program touches the lives of 15 million young people each year and recognizes the importance of nurturing curiosity and spreading the joy of discovery to every classroom in the United States.

INVENT AMERICA! succeeds because it allows students to learn and have fun at the same time. This year more than 300,000 students from California and millions more nationwide have entered the competition with ideas as diverse as an assist-a-chef apron, battery-powered ski lights, disposable bibs, and a device which extracts prizes from cereal boxes with uncanny speed. Last year, I was delighted when a student from my district became one of the regional finalists. Her roadside accident screen is but one shining example of the tremendous potential INVENT AMERICA! unleashes.

National prizes in years past have gone to a biodegradable golf tee, a braille rail that tells blind people when they have reached the top of a flight of stairs, an easy-off label which makes recycling easier, a remember clock to help Alzheimer's victims with daily needs, and a park bench which can double as a bed for a homeless person.

This summer, INVENT AMERICA! will again bring its 45 regional finalist to Washington to showcase their ideas and to celebrate the 1991 competition. The highlights of INVENT AMERICA! Week are the annual Congressional Ice Cream Social and the national awards ceremony announcing the nine best student inventors in America. I invite all of my colleagues to come out and meet the pioneers of tomorrow later this summer.

Mr Speaker, INVENT AMERICA! shows what our children will offer our future if properly motivated and challenged. Congressional recognition of INVENT AMERICA! Week draws attention to a program that works by harnessing the boundless energy of the mind.

I urge all of my colleagues to support this resolution to further encourage the young dreamers, discoverers, and doers among us. Our future rests with them.

United States of America

Congressional Record

WASHINGTON, DC
TUESDAY, MAY 7, 1991

Senate

NATIONAL INVENT AMERICA! WEEK

By Mr. Warner (for himself, Mr. COCHRAN, Mr. DeCONCINI, Mr. GLENN, Mr. HATCH, Mr. INOUYE, Mr. ROBB, and Mr. SEYMOUR):

S.J. Res. 140. A resolution to designate the week of July 27 through August 2, 1991, as "National INVENT AMERICA! Week";

• Mr. WARNER, Mr. President, in celebration of the soaring spirit of pride in the youth of America and in the wake of our noble success in Desert Storm, I am proud to introduce legislation today to designate July 27 through August 2, 1991 "National Invent America! Week."

I can think of no finer hour to introduce this legislation to my colleagues and the Nation than now, as many of America's best and brightest are returning from the Persian Gulf as heroes of the war and of the American can-do spirit.

At the very heart of America's greatness is its inventive and independent spirit. This spirit allowed our first Americans the freedom to forge a new nation that has gone on to lead the world in technology, innovation, and invention. Our Nation's Leadership ability and economic vigor throughout the last two centuries has characterized the "never say never" drive of America's inventors and innovators who dared to challenge the unknown and to fight for a better world for all of us.

That very spirit that helped found our Nation can be seen in each young face returning from the Persian Gulf. Because of the Invent America! Program, our young people have been given the opportunity to nurture their entrepreneurial spirit.

It is precisely that spirit that allows our Nation to continue to lead the way for others.

As President Bush recently said, "We hear so often about our young people in turmoil; how our children fall short; how our schools fail us; how American products and workers are second class. The America we saw in Desert Storm was first class talent...They did it using America's state-of-the-art technology."

It is perhaps impossible to know exactly how many of our young soldiers serving in the gulf participated directly in the Invent America! Program in their schools. But I do know that Invent America! has touched the lives of millions of students in grades kindergarten through eighth grade each year since being launched by President Bush in 1987. Invent America! is now recognized internationally as one of the most successful public-private partnerships expanding student knowledge and innovation.

As testimony to Invent America's international recognition, two winners in the program, Brad Bolerjack of Lockport, IL and Katherine Szudy of Parma, OH, have been awarded highest honors in the Japanese Institute of Invention and Innovation's Fourth World Competition and exhibition of Young People's Inventions in Tokyo.

These bright young American students' inventions were selected from more than 200 entries from 30 nations as 2 of 11 world class winners invited by the Japanese to receive their awards in Tokyo. I salute Brad and Katherine and Invent America! for a job well done.

Today President Bush serves as honorary chairman for the Invent America! Program which is available to all of our Nation's 31 million children through this critical public-private sector partnership. The Invent America! Program is designed and administered by the nonprofit U.S. Patent Model Foundation located in Alexandria, VA. Funding for Invent America! is provided by corporations such as; K-Mart, Pepsi-Cola, and Polaroid.

This summer, Invent America! will host its 45 regional finalists in the 1991 Invent America! Competition during a week long celebration in our Nation's Capital. The highlight of Invent America! Week is the annual Congressional Ice Cream Social and the National Awards Ceremony announcing the nine best student inventors in America.

It is a pleasure to take this opportunity to honor our Nation's young people and to urge my colleagues to join with me in designating the week of July 27 through August 2, 1991 as National Invent America! Week. •

The Washington Post

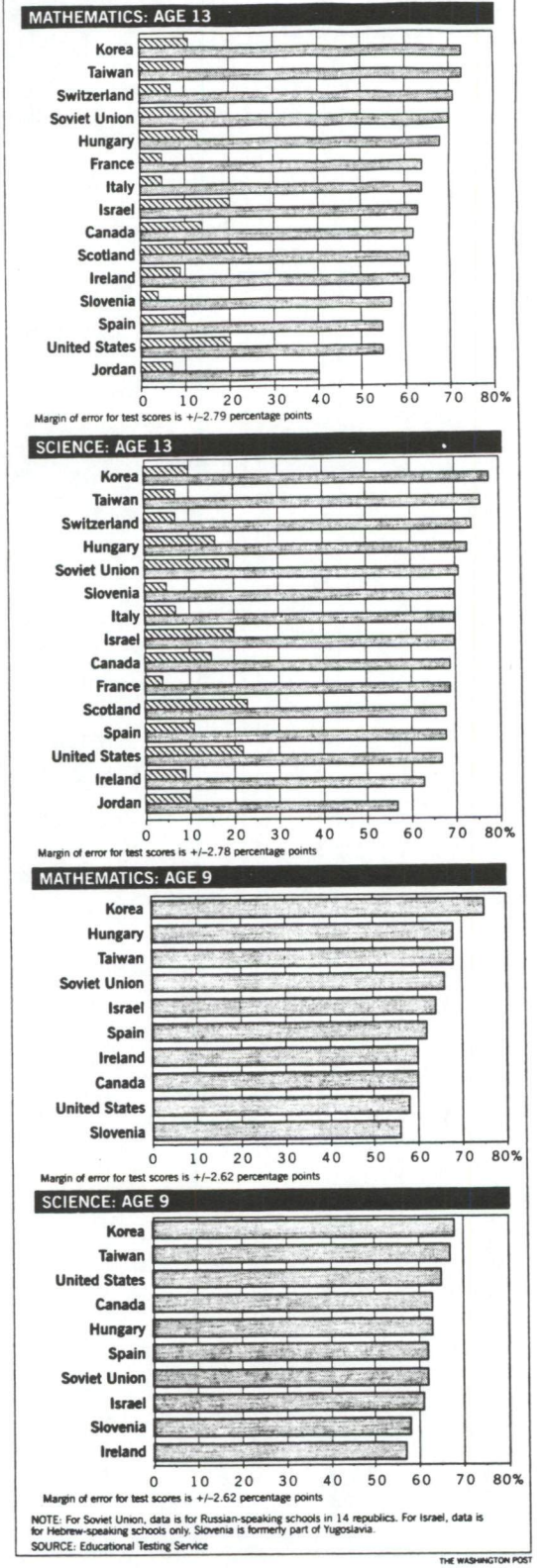
U.S. Students Below World Average in Math, Science

STUDENT SCORES

The following charts show the average scores of students participating in the International Assessment of Educational Progress achievement tests in mathematics and science.

▨ Percent of students who watch television five hours or more each day

▩ Average percent correct



NOTE: For Soviet Union, data is for Russian-speaking schools in 14 republics. For Israel, data is for Hebrew-speaking schools only. Slovenia is formerly part of Yugoslavia.

SOURCE: Educational Testing Service

THE WASHINGTON POST

SECRETARY OF LABOR
WASHINGTON

JUL 19 1991

Our country faces many challenges as we approach the 21st century. We must prepare our changing workforce for new types of jobs which require new skills and training. Educating young people in the skills of the new workplace is a critical element in making our country competitive in the global economy.

INVENT AMERICA! is an important and creative endeavor in directing young people and schools to the skills of the new workplace. The degree to which we motivate and inspire our young people to new heights of achievement and creativity will determine the quality of life we will all enjoy tomorrow.

I applaud all who are involved in making this program work. INVENT AMERICA! has captured the imagination of students and school officials across the country in a way which harnesses our greatest natural resource: the skills and ingenuity of young people.

Lynn Martin

LYNN MARTIN

UNITED STATES DEPARTMENT OF EDUCATION

THE SECRETARY

TO INVENT AMERICA! AWARD WINNERS AT THE 5TH ANNUAL NATIONAL AWARDS BANQUET ARLINGTON, VIRGINIA

August 1, 1991

Earlier this year, when President Bush was addressing the National Education Goals Panel, he spoke of the challenge Americans have to transform ourselves from a nation at risk to a nation of students. To do so, he said, would take time -- AMERICA 2000, the President's strategy for reaching the National Education Goals is a nine-year mission -- but Mr. Bush also said that we have a secret weapon in our revolution for education excellence, and that's our kids.

The President called America's young men and women the best natural resource of any nation on earth. The winners of the Invent America! awards certainly prove that. From a kindergarten class in Eagleville, Tennessee, to a third grade class in Tucson, Arizona, to an eighth grade class in Orangeville, Utah, you all have shown America the spirit and inventiveness that made this nation great.

There is a lot of work to do between now and the year 2000 to make our schools, and our nation, all they can be. Every American, in every community, is going to be asked to pitch in with good ideas, energy, and commitment to create AMERICA 2000 Communities and New American Schools. You young people have a head start on the idea side of things; your inventions are not only unique and useful, but they send a message that the full potential of America's youth is still to be tapped.

President Bush left the Education Goals Panel meeting with this thought, a favorite quote of his, "Whatever you can do -- or dream you can do -- begin it. For boldness has genius, power, and magic in it."

Congratulations to all the winners. Dream those dreams, and keep the spirit of invention alive.

Lamar Alexander

Lamar Alexander

400 MARYLAND AVE., S.W. WASHINGTON, D.C. 20202-0100

BUSINESS
Detroit Free Press



JOHN A. STANO/Detroit Free Press

Discussing creativity and competitiveness at K mart headquarters Wednesday are, from left, Ruth Otte, the Discovery Channel; Craig Weatherup, Pepsi; Joseph Antonini, K mart; moderator Roger Kennedy; Peter Eio, Lego Systems; MacAllister Booth, Polaroid; and Alan Waxenberg, Good Housekeeping.

FAILURE BRINGS SUCCESS

CEOs explain how creativity results from trying ideas again

BY JOAN RICHARDSON
Free Press Education Writer

Craig Weatherup was 29 and working for Pepsi-Cola Co. when he decided Japan needed Diet Pepsi.

"It was an interesting idea. There were no diet products in the market. Ninety days later, it was a total, absolute failure," said a grinning Weatherup, now 45, who eventually became Pepsi president and chief executive officer.

The experience taught him that failure often accompanies creativity. "That was expected. It was appreciated," he said.

Weatherup was one of six executives who took part in a discussion about creativity and competitiveness Wednesday at K mart headquarters in Troy. Their taped discussion was to be transmitted via satellite Wednesday night to 50,000 teachers at 2,200 K marts nationwide to learn about Invent America, a business-endorsed effort aimed at fostering creative and analytical thinking skills in U.S. students. The five-year-old Invent America project culminates each year with a national invention competition among kindergarten through eighth-grade students.

The CEOs hammered home that being creative requires a willingness *not* to succeed every time.

"Creativity builds creativity," said Weatherup. "It is a try and try again kind of orientation. There is no such thing as great creative insights. It's hard work, built of failing one time, succeeding the next, and trying again. It's very much a cumulative process that requires a degree of perseverance."

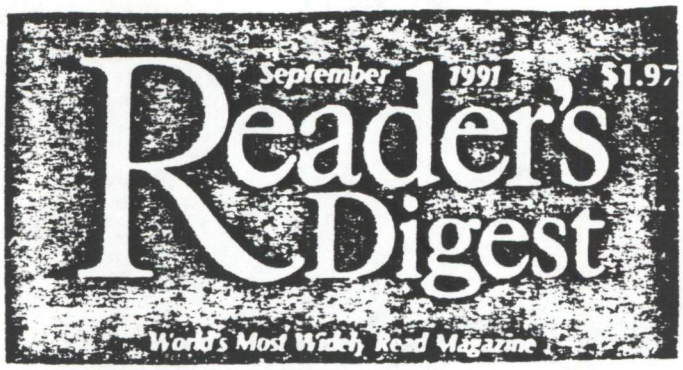
Alan Waxenberg, publisher of Good Housekeeping magazine, said being creative requires courage. "Sometimes, it doesn't look like an idea is going to work. But if you believe in it enough, stay with it long enough, it will," he said.

Several executives recalled adults who had helped shape their get-up-and-go attitudes. For K mart's Joseph Antonini, it was his parents' constant encouragement to "do something"; for Polaroid CEO MacAllister Booth, it was Miss Taylor, his Algebra 4 teacher, who set high standards; for Lego Systems' Peter Eio, it was a British science master who demanded effort but accepted that not all his students were capable of brilliance in science.

Ruth Otte, president of the Discovery Channel, portrayed herself as a classic straight-A student who took pride in spitting back the answer she knew the teacher wanted. As she grew older and became concerned that she lacked creative spark, a teacher reminded her that the essence of creativity was learning how to respond to the needs and concerns of others.

"The 'I already know that' attitude kills the spirit of learning," said Otte. By acknowledging that we don't know and pushing ourselves to learn more, Otte argued that America and American business can end up stronger in the end. "We might end up being a strong country because of it," she said.

Lego's Eio endorsed that notion. "If we are creative, then we will be competitive," he said.



A Son's Challenge

ONE SATURDAY AFTERNOON in January 1989, Suzan Sharp, 43, and her eight-year-old son, David, were trudging across a snowy parking lot in Chippewa Falls, Wis., when Suzan's cane slid on an ice patch. She tumbled face-first into the slush. David rushed to his mother's side. "Are you all right, Mom?"

Shakily, Suzan pulled herself up. "I'm okay, honey," she said.

It had been nearly two years since Suzan was told she had multiple sclerosis. She was falling more frequently now. Every patch of ice was a potential bone fracture. *I wish I could do something,* the boy thought.

David, too, was having troubles. The second-grader had a speech impediment. At school he rarely asked questions or read aloud.

One day David's teacher announced a special assignment. "Each of you is going to come up with an invention," she said. This was for Invent America!, a national contest sponsored by U.S. business to foster creativity in children.

David's contest idea hit him one evening. If only his mother's cane didn't slip on the ice, he thought. *That's it!* David realized. He rushed to the door and grabbed the cane. "What if I fixed it so a nail poked out of the bottom?" he asked.

"But the sharp end would scratch floors," Suzan said.

"No, Mom. I could make it like a ball point pen. You take your hand off the button and the nail pops back up."

Hours later the cane was finished. David and his father, Jeff, watched as Suzan used it to shuffle 50 feet across the ice. "It works!" she said.

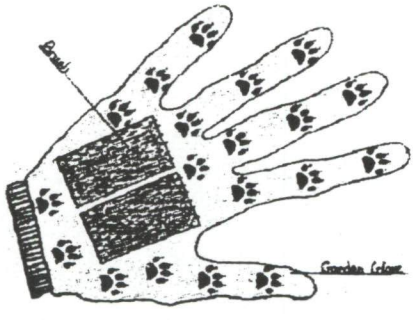
In July 1989, David was declared national winner at the annual Invent America! ceremony in Washington, D.C. On the plane back from Washington, Jeff spoke to a woman from Minnesota. She, too, had multiple sclerosis. Could David, she asked, make her a similar cane?

As David began to make public appearances, he was forced to communicate more clearly. Today, David is nearly free of his speech impediment, and his cane awaits patent approval by the Patent and Trademark Office. So the boy who once had trouble talking now hopes to start making canes for people who have trouble walking. —Gary Johnson

Kids show there's no patent on creativity

THURSDAY, JUNE 27, 1991

USA TODAY



'PET PAWS': Pet groomer in a glove by Mary Beth Ellis of Lewes, Del.

By Donna Gable
USA TODAY

Rachel Courter, a kindergartener from Montague, N.J., knows bedtime can be traumatic "if someone is scared of the dark and can't fall asleep."

Her solution — a glow-in-the-dark blanket — is one of 45 finalists in the U.S. Patent Model Foundation's fifth annual Invent America! competition being judged today. Winners in kindergarten through eighth grade will be announced in August.

From a device that lets lost campers shoot streamers into treetops (created by Reed Wangerud, Littleton, Colo.) to a pet groomer built into a glove, (invented by Mary Beth Ellis, Lewes, Del.) the finalists' creations are all simple solutions to everyday problems.

"It's important to tell children they should try to do something real," says Dr. Robert Jarvik, inventor of the first artificial heart and one of the judges.

Participation has grown from 5,000 schools in 1987 to 30,000 today. "Millions of kids are involved," director Nancy Metz says.

A sampling:

▶ **Pocket diaper.** A disposable diaper with a pocket for a sanitary wipe, packet of powder. By kindergartener Chelsea Lanmon, Hamilton, Texas.

▶ **Dial-a-fish.** Eric M. Bunnelle, a Columbia, Mo., third grader, can reach out and feed his fish, by phone. A hand massager shakes food into their bowl when the phone rings.

▶ **Safety tire.** Jeremy Martin, Tupelo, Miss., grade 6. Worn treads turn white when they become dangerous.

Kids' inventions merit attention

Here are the 45 Invent America! competition finalists selected through school and state competitions by grade. **(story, 1D).**

KINDERGARTEN: Rachel Courter, Montague, N.J. Glow-in-the-dark blanket.

▶ Chelsea Lanmon, Hamilton, Texas. Diaper with a pocket for wipe, powder.

▶ Katherine Larson, Bozeman, Mont. Shade-a-baby car seat.

▶ Joey Phelps, Brainerd, Minn. A seed-planting funnel.

▶ Christopher Thor Rankin, Eagleville, Tenn. Plastic pocket liners.

FIRST GRADE: Elizabeth Hay, Edgeworth, Pa. Grab tabs for plastic wrap.

▶ Nichole Klein, New Albany, Ind. Lazy Susan for the refrigerator.

▶ Christopher McConnel, Savannah, Ga. Child-proof washing machine.

▶ Robert Porter, Eagle Point, Ore. Spring-loaded truck bed cover.

▶ Matt Wertin, Lakewood, Colo. Ladder leveler for a hill.

SECOND GRADE: Benjamin Keith Christgau, Somers, N.Y. Parking meters adapted for credit cards.

▶ Jamie Garman, Las Vegas. A sled on rollers instead of blades.

▶ Kurt Davidson Korte, Virginia Beach, Va. A crab net with a lid.

▶ Aaron Edward Nowack, Little Rock, Ark. Microwave oven with bar-coded cooking instructions.

▶ Curtis Schroeder, Lost Nation, Iowa. A jacket for sows' udders.

THIRD GRADE: Eric M. Bunnelle, Columbia, Mo. Remote fish feeder.

▶ Ben Hixon, Tucson, Ariz. Solar panels that fit in a briefcase.

▶ James Michael Konechne, White Lake, S.D. A reading desk specially designed for the visually impaired.

▶ Travis L. Metzger, Louisville, Ky. Paint roller washer.

▶ Adam Sampson, Clifton Park, N.Y. A child-proof wall outlet plug.

FOURTH GRADE: Glenn Richard Olds Jr., East Greenwich, R.I. Mosquito zapper.

▶ John A. Rasmussen, Fruit Heights, Utah. A child car seat that converts to a stroller.

▶ Shelbi Simpson, Golden, Colo. A stay-cold plate.

▶ E. Allen Taylor Jr., Newnan, Ga. Glow-in-the-dark furniture paint.

▶ Mary Kay Waupoose, Keshena, Wis. A laser beam system to prevent airplane crashes on runways.

FIFTH GRADE: B.J. Baker, Tahlequah, Okla. Twine and staple gun in one.

▶ Daniel G. Berger, Verona, Wis. A tank for disposing of dog droppings.

▶ Katie R. Garvey, Orlando, Fla. A machine that crushes plastic foam to put in potted plants.

▶ Darcy Leigh Irvin, Pismo Beach, Calif. Easy window screen.

▶ Heather Timbie, Califon, N.J. A step stool with storage space.

SIXTH GRADE: Kurt Bidstrup, Idaho Falls, Idaho. A platform for a ladder.

▶ Ann Dorniden, Eden Prairie, Minn. Laundry with bar-coded dry cleaning instructions.

▶ Matthew Gibson, Rehoboth Beach, Del. A "skateboard" for ice.

▶ Austin Kyle Lankford, Westminster, Md. Inflatable cushions attached to the floor of a canoe.

▶ Jeremy Martin, Tupelo, Miss. Tire treads turn white with wear.

SEVENTH GRADE: Sara Blumer, Novi, Mich. Touch-tone voting by phone.

▶ Chris Chapman, Germantown, Tenn. A wooden spoon with a notch to rest on the side of the pot.

▶ Kristen Marshall, Danvers, Mass. "Censor-Sensor" blocks TV shows with profanity or violence.

▶ Joshua Nelson, Post Falls, Idaho. A wheelchair that narrows for tight spaces.

▶ Reed Wangerud, Littleton, Colo. A signal for lost campers.

EIGHTH GRADE: Wes Butler, Orangeville, Utah. Automatic flag protecter.

▶ William Cotten, Red Oak, Texas. A device to keep bridges from collapsing during earthquakes.

▶ Reeba Daniel, Palos Park, Ill. A slide to move clothes automatically from washer to dryer.

▶ Mary Beth Ellis, Lewes, Del. A pet grooming glove with a brush.

▶ Bob Joyce, Parma, Ohio. A slip-proof crutch.

SANTA-YNEZ VALLEY NEWS
SOLVANG, CA
WEEKLY 8,000

MAR 12 1992

GATE students in 'Invent America'

Gifted and Talented Education Program students at Santa Ynez Elementary School take first place for science projects entered in Invent America.

Lottie Hodgeman, GATE resource teacher at the school said, "Invent America was launched because of an urgent need in this country to provide students with opportunities to learn and apply higher thinking skills."

The fair was held in early February at Santa Ynez Elementary School gym for third through seventh grade students. The first place winners' projects, one per grade level, are mailed to Alexandria, Va.

The judges will choose one winner per grade level for state awards and state winners are then eligible for regional and national awards. The national winners will be invited to Washington, D.C.

The program addresses the need to help kindergarten through ...ht grader students learn ...al and creative thinking through the process of inventing.

The children learn to apply problem-solving skills as they turn their own creative ideas into inventions.

Invent America is sponsored and administered by the nonprofit United States Patent Model Foundation. The foundation is not a government agency and is supported through corporate and private contributions.

Santa Ynez Elementary School first entered the program in 1988 and David Manning, now a senior at Santa Ynez Valley Union High School, won first place for California with his cyclo-viewer.

Santa Ynez School's first place winners were John Eaglesham (third grade) for his Bike Brake Light Kit, Shelene Petersen (fourth grade) for her E-Z Medicine Feeder, Ryan Stephen (fifth grade) for his Recycled Water Bottle, Megan Morrison (sixth grade) for her Homework Helper and Paul Norwine (seventh grade) for his Step Toilet.

CHRONICLE-TRIBUNE
MARION, IN
DAILY 21,026

WEDNESDAY
MAR 11 1992

■ HAMILTON HONORED: Heather H...
ton, sixth-grader at Jones Middle School, was recently presented a $200 savings bond for winning the Grade Five State Award in the annual Invent America Completion. Sponsor K mart made the presentation at its Marion store.

The winning school will also receive gifts, including books for the library.

Heather is the daughter of Paula Parson, 319 E. Grant St.



Hamilton

OBSERVER
DE WITT, IA
-TIMES/WEEK 5,00(
WEDNESDAY

MAR 4 1992

Schroeder receives Invent America award

Curtis Schroeder, national award-winner for his top second-grade "Sow Jacket" invention in the 1990-91 national Invent America! competition, will be recognized at an award ceremony March 4, at the Cala...
...heatland Elementary School at 2 ...

non-profit Invent America! education program and its corporate sponsors: K mart, Binney & Smith and Polaroid. The winner's school will also receive gifts including Invent America! program materials, books for its library, education materials, and Invent America! classroom banner and flag of excellence.

BRANSON BEACON AN...
BRANSON, MO
WEEKLY 6,321

MAR 11 1992

Invent America' exhib... to display Branson talen...

The Thomas Edison of tomorrow could be at Branson Elementary next Saturday.

This year's "Invent America" exhibit, created by Branson Intermediate EAGLES students, will be on display March 14 at the Branson Intermediate Gymnasium.

The inventions, ranging from a "Glow-In-The-Dark Pacifier" to a "Cozy ... have been created by students in grades two through six. Win... from each grade level will be submitted to the National ... Contest in Washington, D.C.

The inventions can be viewed from 1-2 p.m. The a... exhibits can be viewed from 1-2 p.m. The a... ...tor also will receive a certificate of participa... ...rovided by Ozark Mountain Bank and Magna... ...dents are under the instruction of Lea Trimb...

COVINGTON
2-TIMES/WEEK 6,900

YOUR HEALTH
BOCA RATON, FL
BI-WEEKLY 40,000

SUNDAY
MAR 1 1992

Cousins 'i...

...ventor Maria Golson has solved ...can be a big problem for TV ...Golson enjoys watching ...commercials come on, the ...ots up."

...on came up with the ...vice that will keep the ...at a constant level from ...grams through commercials.

The result? "The Volumizer."

Golson is one of 38 junior inventors at Cousins Middle School in the annual Invent America! competition, designed to stimulate creativity and develop students' problem-solving skills.

Inventions are judged on ...inality, usefulness, written ex... ...on of ideas, and quality of re... ...ch. Two winners from each ...ade level are selected to compete ...at the county level. Winners go on ...to state competition.

...in the annual Invent America! competition, designed ... creativity and de... problem-solvi... Inventi... origin...

...search. T... grade level ... at the county ... to state compe... Placings at ... competition are as ... Sixth Grade: Ma... place for "Pencil Bu... Mattice, second pla... Safely"; Scott McM... place for "No Spill Drin... and Amy Barnhart, honora... tion for "The Hot Hut."

Seventh Grade: Andrea H... son, first place for "Fire Esca... Amanda French, second place ... "Handy Hold"; Selina Kimbre... third place for "Bruise Buster"; and... Christy Cabe, honorable mention ... for "Permanent Place Saver."

Eighth Grade: Drew Denman, first place for "Feed With Ease"; Maria Golson, second place for "The Volumizer"; David Drake, ...d place for "Hang-10 Scuba"; Jessica Wearing, honorable ...ntion for "Dirt Alert."

MAR 24 1992



A 13-year-old's bloc... able tee is making ... more ecologically ... game. Casey Golden ... of Evergreen, Colora... ceived and devised ... TEE, which decom... to 36 hours after ... posed to outdoor ... and becomes mu... sacrifices no treet... inal formula wa... moss, fertilizer, g... water, flour a... sauce, which w... prize in the 1... America! conte... fined the recip... cycled plant fib... and beverage ... started Bio-Dy... where orders h... lion. It's availa...

The Washington Post

MONDAY, JULY 29, 1991

Young Edisons Gather at Invention Convention

Corporate Executives Take a Serious Look at the Projects on Display at Freedom Plaza

By Peter Baker
Washington Post Staff Writer

Football season is just around the corner, and a pair of 11-year-old inventors from Indiana have the perfect solution for those diehard Washington Redskins fans who insist on catching every Art Monk reception on TV.

They call it the "Couch Potato Pop Pourer." The idea is to save energy for thirsty football fans, soap opera junkies and others who can't pry their rumps off the sofa long enough to trudge into the kitchen and pour a drink.

How does it work? Simple, really. You pull a cord that tips over a pivot that releases a golf ball that falls into a cup that weighs down a lever that lifts a burning candle up to a string that burns and breaks and releases a weight that hits another pivot that tips a bottle of your favorite soft drink right into your cup.

The Rube Goldberg-style invention was on display at Freedom Plaza next to the District Building yesterday as part of the fifth annual Invent America! competition. Fifty of the nation's premier pre-teen inventors have been brought to the capital for a week of honors, to be capped Thursday by an awards ceremony with U.S. Commerce Secretary Robert A. Mosbacher.

In addition to coming to Washington, among the prizes are trips to baseball games, junkets to the Rose Bowl and savings bonds.

The program, launched in 1987 by an Alexandria-based nonprofit affiliate of the U.S. Patent Model Foundation, encourages kindergartners through eighth-graders to devise solutions to everyday problems.

Hence, the Couch Potato Pop Pourer. "Instead of having to get up to go to the kitchen, you can just use it," said Andrew Bell, who perfected the device with his partner, Nathan Frederickson of Elkhart, Ind.

Don't laugh. Corporate executives take this seriously.

Frank Sando, a representative of 3M, one of several companies sponsoring the event, invited Andrew and Nathan to come to St. Paul to interview for jobs when they were old enough. "It's people like this who are working on our next Scotch tape project," he said.

There was also Chris Chapman's "Spoon at Rest," a kitchen device that attaches a stirring spoon to a wooden clamp to keep it from falling into the pot. And Ben Christgan's "Jamin Meter," which allows patrons to pay for street parking via credit card. And Ryan J. Nolan's "Remarkable Rinkle Remover," which turns a closet into a steam bath to save on ironing time.

Organizers consider the winners the latest salvos in America's war to return to economic superiority.

J. Morgan Greene, chairman of the competition, said Invent America! will help stimulate creative energy among young people to regain that edge, even for some of the more, well, far-fetched ideas.

"We would love to have them all make a million dollars—that's the American way," he said. "But that's not the point. It's the thought that counts . . . . The very act of attempting to create the solution and failing and trying again and failing and trying again and coming up with something . . . it's that thought that's going to make America No. 1 again."

It's certainly made Kurt Korte a top crab catcher in his family.

The third-grader from Virginia Beach invented a crab net with a lid on it to help him catch the wriggly things. All he has to do is release a string to pop the lid on the unsuspecting crustacean and—voila!—dinner is served.

"It's good, but I do need to put some new things on it, like a clear lid, so I can see through it while it's still in the water," said the 8-year-old. "And I want to put some holes in it so it'll move faster through the water."

ECCENTRIC (TROY EDITION)

BIRMINGHAM, MI
2-TIMES/WEEK 8,400

MONDAY
AUG 20 1990

BURRELLE'S

31 BM



Richard S. Miller, executive vice president of the Troy-based K mart Corp., and Julie Dolly, 10, are all smiles after the youngster won K mart's Invent America! prize.

5601

K mart rewards recycling idea

Richard S. Miller, executive vice president of the Troy-based K mart Corp., presented the company's first Environmental Award in the Invent America! competition to Julie Dolly, 10, of Lakebay, Wash.

Miller presented Dolly with a $1,000 U.S. Savings Bond, a Rand McNally Illustrated Atlas of the World and an Invent America! medal during Invent America! opening ceremonies July 22 in Washington, D.C.

K mart established a new environmental category this year to the Invent America! competition for an invention that best addressed an environmental issue. Dolly's invention, Easy Off Labels, was selected as K mart's award winner by a panel of K mart judges.

Easy Off Labels could make the recycling process easier. Dolly suggests that manufacturers of canned goods insert a pull string under paper labels on cans. Consumers would simply pull the string to easily remove the paper label from the can. The can could then be saved for recycling.

Dolly contacted local recycling centers in her home town and learned that to recycle products labels would have to be removed from cans but not glass. She came up with the Easy Off Label idea and submitted it to Invent America!.

When Dolly was asked what the need for Easy Off Labels is, she responded, "When recycling cans, it is often difficult to get the labels off. This could discourage recycling."

The Invent America! education program and student invention competition is administered by the non-profit United States Patent Model Foundation. The Foundation is funded through corporate contributions and is not a part of the U.S. Patent and Trademark Office or any government agency.

Invent America! provides education materials for classrooms and training for educators through national and regional conferences and in-service programs. For more information, call or write Invent America!, 510 King Street, Suite 420, Alexandria, Va. 22314, 703-684-1836.

NEWNAN, GA
2-TIMES/WEEK 14,000
WEDNESDAY
MAR 4 1992

"Invent America" Winners Announced

5601A

Winners in the 1992 Coweta County Invent America! competition were announced last Friday, Feb. 21, at the Shenandoah Environment and Education Center.

Winners from grades kindergarten through eight received trophies and certificates for their inventions and will now represent the county's elementary and middle schools in the state competition.

Nelda Boren, administrative assistant for Instructional Services for Coweta County Schools, said, hopefully some of the students will be able to qualify for the 10-state Southeast Region contest and the national finals by first winning their grade division at the state level.

Invent America! is an education program developed and administered by the United States Patent Model Foundation. The program is designed to help children develop creative and innovative thinking skills by creating their own inventions to solve everyday problems.

Winning inventions are selected by judges based on points awarded in four catagories: Originality / Usefulness, 50 points; Written Description, 20 points; Research Performed, 20 points; and Illustration, 10 points.

Winning students are awarded U.S. Savings Bonds as prizes — $200 for state winners, $500 for regional winners, and $1,000 for national winners.

This will mark the sixth year of the program which was launched in 1987 by then Vice-President George Bush who currently serves as honorary chairman of Invent America!. The President of the United States traditionally congratulates national winners for their ingenuity and creativity in a special ceremony held in Washington, D.C. More than $600,000 is awarded annually to students, teachers, and schools by the USPM Foundation.

In 1987 Coweta County had two Southeast region winners. In 1988 the county had eight district winners, and seven in 1990. Students representing Coweta County have appeared on the Disney Channel, the David Letterman Show, and the Johnny Carson Show.

Last year, E. Allen Taylor, Jr., a fourth grade student from Elm Street Elementary School, represented Coweta County in the national competition after winning the fourth grade level Southeast regional competition with his "Light In The Dark Polymer" invention.

As a regional winner, Allen received a $500 U.S. Savings Bond, along with awards for his school and teacher, and was interviewed on a national television program where he discussed his polymer invention — a glow in the dark furniture paint which makes objects more visible at night.

Allen was selected again this year as a Coweta County winner, fifth grade, with his "Magical Magnifying Tape" invention — which can be placed on medicine bottles to enlarge the print, thereby making the instructions easier to read. This is the fifth consecutive year that Allen has won the county division for his particular grade level.

Local winners who will be representing Coweta County in the state competition are:

• **Stacy Moore**, kindergarten, Northside Elementary School; "Shoe Siders."

• **Marcus Pollard**, first grade, Eastside Elementary School; "Upside Drip Down Stand."

• **Anna Brooks**, second grade, Moreland Elementary School; "Drink Bottle Carrier."

• **Elizabeth Davis**, third grade, Moreland Elementary School; "Super Seat."

• **Lacy Payton**, fourth grade, Elm Street Elementary School; "Unplugable."

• **Allen Taylor**, fifth grade, Elm Street Elementary School; "Magical Magnifying Tape."

• **Christy Williamson**, sixth grade, O.P. Evans Middle School; "Roller Poller Christmas Tree Holder."

• **Meredity Hoffman**, seventh grade, Central Middle School; "The Hot Water Helper."

• **Amber Walls**, eighth grade, Central Middle School; "Travel Meter."



KINDERGARTEN THROUGH FIFTH GRADE winners — honored for being among the most creative thinkers in the Coweta County School System — were recently awarded trophies for inventions they created in the county Invent America! Contest. Winning students will now go on to compete at the state level. Kindergarten through fifth grade winners are, front row, left to right, Marcus Pollard, Stacy Moore, and Anna Brooks; back row, left to right, Allen Taylor, Elizabeth Davis, and Lacy Payton.



MIDDLE SCHOOL WINNERS in the Coweta County division of the Invent America! Contest are, left to right, Amber Walls, Christy Williamson, and Meredith Hoffman. The Coweta School System winners were honored at ceremonies at the Shenandoah Environment and Education Center Feb. 21.

DAILY JOURNAL

FERGUS FALLS, MN
DAILY 11,582

FRIDAY
FEB 21 1992
BURRELLE'S

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At San Rafael

Invent America winners receive awards

5601A



Wes Butler, right, and Tammy Labrum, show their awards while Invent America officials Lydia Beason and Trent Linville stand by.

San Rafael Junior High had two INVENT AMERICA winners in the 1990/91 competition. Wes Butler was a Regional winner and received a $500 bond and a trip to Washington, D.C., His parents and his teacher, Mr. Barry Bishop also receive a trip to Washington. The region covers 11 western states. Tammy Labrum was a state winner and received a $200 bond. Her teacher is Mr. Karl Niebergall.

The winners were recognized at an awards ceremony on Feb. 12 at San Rafael Junior High. The awards program was provided by the noprofit INVENT AMERICA education program and its corporate sponsors Kmart, Binney & Smith and Polaroid. The winner's school also receive gifts including INVENT AMERICA program materials, books for its library, education materials, an INVENT AMERICA classroom banner and flag of excellence. Employees of the Price Kmart were at the assembly to present the bonds.

Wes Butler won the top Eighth Grade Regional Award for the "Old Glory Guard" invention. "Old Glory Guard" is an invention that stores your flag on the outside of your house. The automatic light and moisture sensors lets the flag down in daylight and automatically stores it during darkness or bad weather.

Tammy Labrum was the Seventh Grade State Winner for her "Automatic Wheelchair Adjustor." "Automatic invention that has an adjustment on the front two wheels of the wheelchair which allows the person to remain level while going up or down inclined surfaces, ie. ramps.

The Washington, D.C., based program and student invention competition was launched in 1987 by the vice president George Bush who now serves as its honorary chairman. It was established to foster innovative thinking amongst America's 31 million elementary school children by challenging them to invent their own solutions to everyday problems.

To encourage American students to develop these critical and creative thinking skills, INVENT AMERICA and its sponsors provide award and national recognition to winners of its annual student invention competition. Currently, approximately 30,000 schools participate in the program.

"Our sponsorship of INVENT AMERICA has given Kmart associates nationwide the opportunity to become actively involved in their community's education system and develop partnership with their schools," said Richard S. Miller, executive stores. Kmart, official reta sponsor of INVENT AMER CA also produces an annua satellite fed training progra in partnership with INVEN AMERICA to help mo schools and teachers lea how to implement the pro ram. This year, approximate 25,000 teachers attended t training program which w available at no cost to teac ers. Polaroid Corporation pr vided gifts of film and camer to participants.

INVENT AMERICA cha man, J. Morgan Greene note "The problem solving ski this education program nu tures are an important fact in preparing this generation Americans to succeed indi dually, and to reestablish o nation as a world leader innovation. We're proud of t accomplishments of INVE AMERICA students and t sponsors who help us bri this program to the natio children.

Any schools in Emery Carbon districts wishi information about becomi involved with the INVE AMERICA program this ye may contact Dianne Butler San Rafael Junior High. T

DESERET NEWS

SALT LAKE CITY, UT
DAILY 60,775

WEDNESDAY
MAR 4 1992

BURRELLE'S

57 GD
xwbbi

Utah people, etc.

5601A



Christopher Sain started collecting sprinklers when he was 2½, using three different heads for his invention.

Young inventor soaks competition with his above-ground sprinklers

The part of the lawn the top sprinkler misses, the middle one i almost certain to catch, and the lower one definitely sops the spot that neither the middle nor the top reaches.

Christopher Sain's "Above-Ground Sprinkling System" consist of three different types of sprinklers on a pop-up pipe. It is s ingenious, it won the William Penn Elementary School youngste first place in the state Invent America contest.

Christopher, now a second-grader, was recently notified his firs grade invention was the state winner.

In an appearance before the Granite Board of Education, th precocious little fellow, decked out like a mini-entrepreneur in su and tie, explained that he received his first sprinkler when he wa about 2½ years old and he's been tinkering with them since. H now has "about 90" sprinkler heads. Some he buys with his ow money, others are gifts. He even asked Santa to add to his hoar

Christopher told the Granite Board members that he wants to b a "sprinkling system engineer" when he grows up.

If that requires a college education, he can add the $200 savi bond he won in the Invent America contest to his fund.

Sara Woodbury was the state's second-grade winner in the n tional competition. Her invention was a Kids Ski Sling, and she al received a $200 award for her inventiveness.

Sara is a student at Carden Memorial School, a private school the Sugar House area.

The contest is sponsored by K mart, Binney & Smith and Pol oid. Winners also receive items for their schools, including libra books, education materials, an Invent America banner and flag f excellence. The program fosters innovative thinking among ch dren, inviting them to create solutions to everyday problems.

UDOT appoints a new director for District 4

Archie Hamilton has been named the new District 4 director the Utah Department of Transportation, which serves Carbon, E ery, Grand and San Juan counties. He replaces Steve Noble, w recently was made director of UDOT's District 6 office in Orer

A UDOT employee since 1960, Hamilton has held many p tions in the department, including draftsman, designer, design gineer and preconstruction engineer.

THE PLAIN DEALER
CLEVELAND, OHIO
D. 428,012
OH-91

FEB 3 1992

BURRELLE'S

Young inventor has flip answer to complaint about toilet seat

5601A

By DON BEAN
PLAIN DEALER REPORTER

SOLON

When Errol Lane was awakened at 3 a.m. by his mother, who had a wet behind and was blaming her son for leaving the toilet seat up, he decided to do something about the problem.

That was just about a year ago.

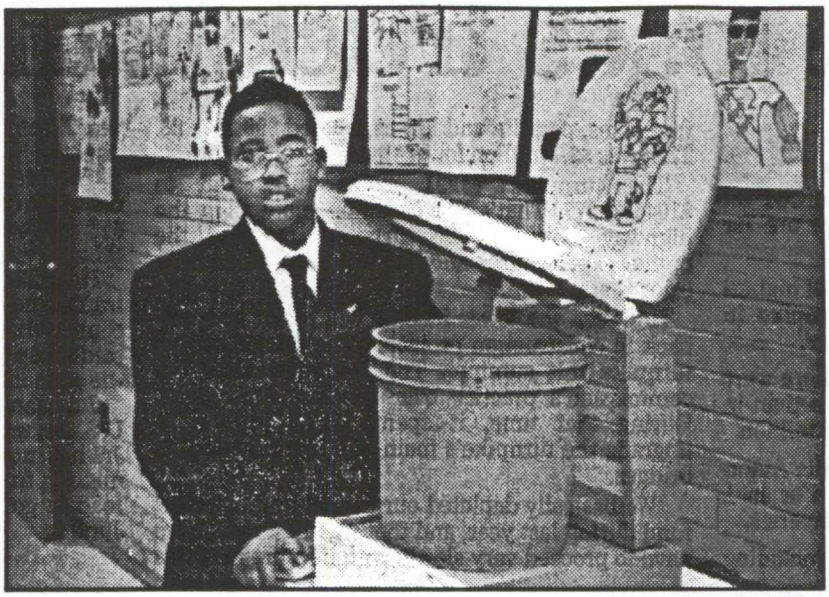
Last week, the Aurora boy, a sixth-grader at St. Rita Catholic School in Solon, was honored by Invent America for the "Flip-Top Seat" he invented to automatically put the toilet seat down after a male in the house used it.

"My mom was yelling and screaming at me. A few days before this our class had just received an assignment from our science teacher to find a problem around the home and invent something to solve it. I thought I had better get busy on this problem in a hurry," Errol recalled.

Errol said he got the idea for his invention from the garbage can at home that has a flip-top lid.

"I thought if it worked for that, why couldn't it work for the toilet seat," he said.

The idea is a simple one, with a foot-long piece of two-by-four that acts as a pedal on the floor beside the toilet base. One merely presses on the pedal while standing over the toilet and a lever raises the seat out of the way. When one is done, the seat returns to its preferred position, down.



PD/RICHARD KENDZIERSKI

Errol Lane won a $200 savings bond from the Invent America program for his "Flip-Top Seat."

"I didn't think I was going to win first prize," Errol said. "My two stepbrothers and stepsister gave me a hard way to go, telling me that it wouldn't work and it wouldn't stay up. But now they are happy I won."

Barbara Slaby, who teaches sixth- and seventh-grade science classes at St. Rita, said her pupils really get involved in the competition.

She said one boy came up with the idea of solar-powered wires under streets and roads to melt ice and snow. "Other inventions have been a revolving light bulb with sheep on it so you can count the shadows of the sheep reflected against the wall to sleep, and dental floss attached to your tooth brush so you can brush and floss at the same time."

Errol won a $200 savings bond as the sixth-grade winner in Ohio in the Invent America education program, which is sponsored by K mart, Binney & Smith and Polaroid.

The program, based in Washington, D.C., was founded four years ago to foster innovative thinking among America's 31 million elementary school pupils.

Errol has dreams of attending Notre Dame University in Indiana, where he wants to play football and major in science.

The Chairman of the United States Patent Model Foundation

cordially invites you to participate

as a jurist

in the selection of the national award winners of the

1992 INVENT AMERICA! student invention competition

Tuesday, June 16, 1992

at the

National Museum of American History

Smithsonian Institution

14th and Constitution Avenues, Northwest

Washington, D. C.

Presidential Suite - First Floor

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Judging immediately following

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The favour of your reply is requested

on or before

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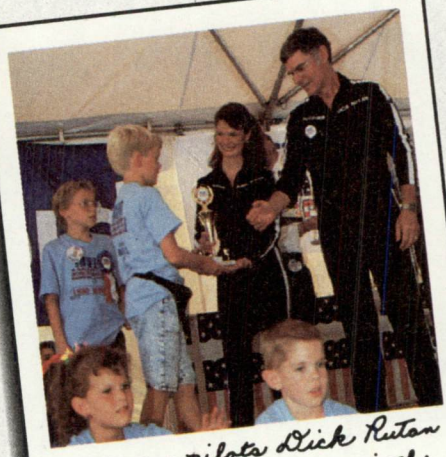
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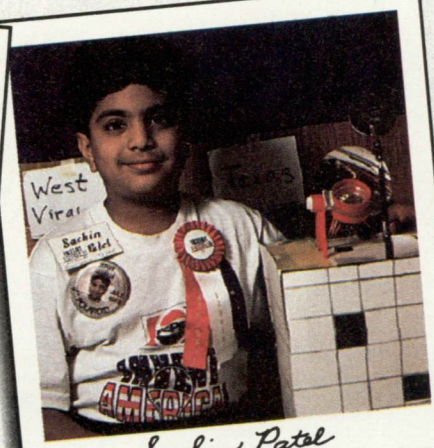
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INVENT AMERICA!

Every child can participate and feel successful regardless of background, academic standing, physical abilities, from special ed to gifted and talented. INVENT AMERICA! levels the playing field and gives all students a chance to feel good about themselves. Every student is a winner in INVENT AMERICA!

"My school will open in one month," wrote 8-year-old Sachin Patel of Schulenburg, Texas. "Already I'm thinking about a new invention for my INVENT AMERICA! project for next year!"

An 8-year-old boy anxious to get back to school? You might think it unusual, but Sachin is just one of millions of highly motivated elementary school students excited about learning by inventing.

Kids in kindergarten to eighth grade are busy inventing solutions to problems large and small—for the environment, the homeless, for people with "special needs," right up to the proverbial better mousetrap. And, as they learn to think creatively, these children are preparing themselves for the challenges of our increasingly complex, technological world.

It's all part of a nationwide effort of the nonprofit United States Patent Model Foundation's education program, INVENT AMERICA! Now entering its fifth year, INVENT AMERICA! is helping kids develop creative, problem-solving thinking skills, providing a way to learn that kids, parents, education experts, and leaders of government and industry all applaud.

The Washington, D.C. based Foundation was organized in 1984 by founders J. Morgan Greene and Nancy J. Metz who serve as chairman and executive director. The Foundation was originally established to develop and fund a $20 million project for the recovery of 19th century models of patented inventions, for the benefit of the Smithsonian (see article in this section). Once efforts were underway, however, the need to broaden its programs to include a major education effort was soon apparent. Greene describes those early days, "we were working to preserve 19th century patent models, a national treasure tracing our growth from an undeveloped nation into an industrial giant.





TOP RIGHT: Regional winner Corrinda Herrington with her mom Joyce (l.), Congressman Lindsey Thomas (c.), and teacher Thelma Lockhart (r.), all of GA.

ABOVE: Stephen Plater of IN was a 1990 state winner.

BELOW: President George Bush, INVENT AMERICA!'s honorary chairman, surrounded by 1988 INVENT AMERICA! winners.



Yet the irony was that American ingenuity was fast becoming a hollow phrase. The United States no longer set the standard for innovation; we could barely keep up." A look at the statistics revealed the following facts:

- In the early 1960's, 89% of all U.S. patents were issued to Americans; by the mid-80's we accounted for only 50%. The balance of these U.S. patents—the benchmark of our nation's industrial prowess—were being issued to foreign nationals.
- During that same time our nation's annual trade deficit went from a $50 billion *surplus* to a $150 billion *deficit*.
- More alarming, the thinking skills of American school children—the ability to create, reason, and solve problems—versus those of other nations—were consistently ranking in the bottom 20% of the world's industrial nations.

Even more foreboding, continues Greene, was that "industry leaders everywhere were deeply concerned that young people entering the job market were deficient in the basic skills needed to perform simple tasks. The warnings in the landmark U.S. education study, 'A Nation at Risk,' were beginning to haunt us."

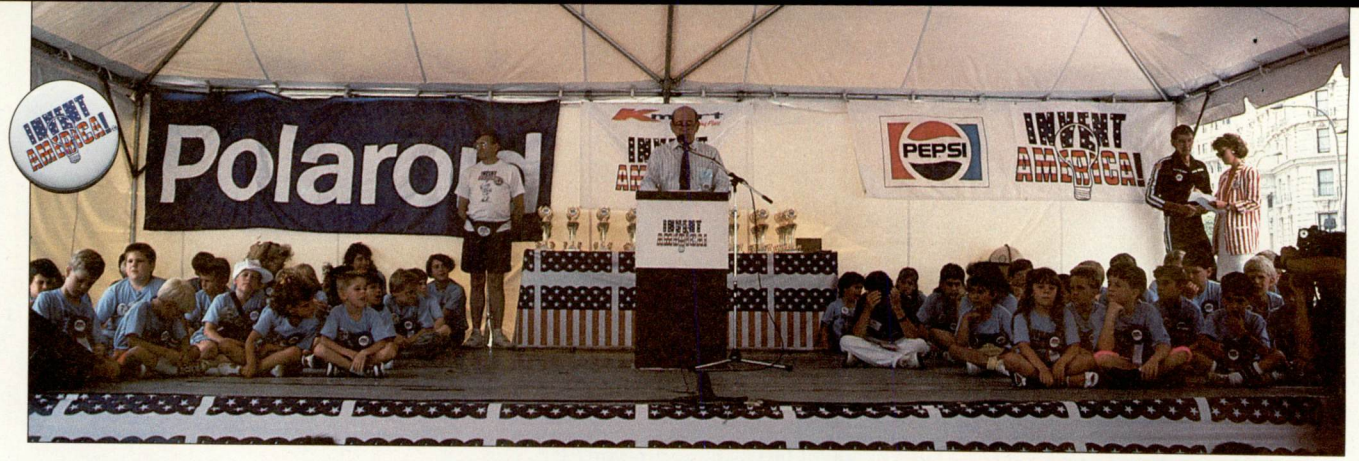
Because of these compelling issues, in 1986 the Foundation began looking for ways to address these education concerns, to "rekindle the spirit" of American ingenuity.

"We had been hearing about schools that were using invention projects as a way to help kids develop higher level thinking skills," says Metz, "and we became very excited by their results. Helping kids develop problem-solving skills while creating an invention renaissance among young people seemed a perfect way for us to address these major issues."

INVENT AMERICA! BEGINS

Working with a host of educators from across the country who generously shared their ideas and expertise, the Foundation began developing materials and a plan to make INVENT AMERICA! a part of every school and classroom in the country.

The basic elements included handbooks for students with step-by-step tips for inventing; lessons and activities for teachers to guide classroom instruction; a handbook for administrators with suggestions for ways to generate local support and administer the program; and the INVENT AMERICA! Creative Resource Guide which lists hundreds of resource materials available through INVENT AMERICA! to



TOP: INVENT AMERICA!'s J. Morgan Green at opening ceremonies for INVENT AMERICA! Week festivities.

BELOW: Enjoying INVENT AMERICA! Week are (from left to right) Michelle Giese of CA, Jarrett Jacobs of AL, and Jonathon Merickel of MN.

(INVENT AMERICA! continued)

nurture creativity. Aware that educators needed help to learn new techniques and rethink old methods of teaching, INVENT AMERICA! also made educator training available. Drawing on education experts and leading authorities skilled in helping children develop critical and creative thinking skills, INVENT AMERICA! began its national and regional conferences. Opportunities for parent and community involvement were also made an integral part of the program.



NATIONAL COMPETITION

A national competition with more than $600,000 in awards for students, teachers and schools at state, regional and national levels was incorporated into the program. It was also announced that the 45 regional winners, their parents and teachers would be invited to Washington, D.C. in the summer to participate in an annual National INVENT AMERICA! Week celebration, during which the nine national award winners would be announced.

With these plans in place, the program was launched in January, 1987, with the help of then-Vice President George Bush, now honorary chairman, who sent messages to schools and students telling them, "America needs your new ideas." The program was an immediate success.



Pat Thomas of NM—INVENT AMERICA! 1988 Educator of the Year.

EDUCATORS LOVE THE PROGRAM

Kevin O'Brien, INVENT AMERICA! program vice president notes, "Educators were quick to realize that INVENT AMERICA! could actually make their job easier. It's a great way to integrate the curriculum. Best of all, kids love it. The overwhelming response from parents, teachers, and kids right from the beginning told us we had a winner."

Kindergarten teacher Pat Thomas of Clovis, New Mexico, now in her fourth year of the program agrees. "By the time the children complete their INVENT AMERICA! projects they apply almost every area of knowledge. They develop an ability to identify and isolate a problem, they learn how to evaluate and analyze, they test and refine their ideas, to bring about the desired results. Children take an abstract concept of their own and turn it into a three-dimensional object, an invention, which they name, describe, draw and display. Some kids even create marketing and advertising plans complete with jingles and commercials. From start to finish they've used math, science, language arts, social studies, and library research skills; these are exercises in creative problem-solving that have lifelong meaning."

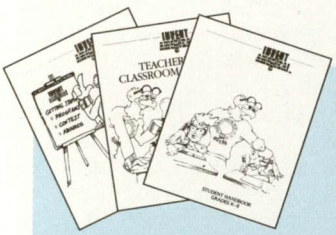
Many schools turn to INVENT AMERICA! instead of science fairs. It helps develop many of the same scientific principles yet allows a student who may be "science shy" to participate. Many students are drawn to inventing because it has more meaning—they problem-solve according to their own interests.

A PROGRAM FOR ALL KIDS

Metz adds, "Along the way kids find that their ideas have power and potential; they explore the lives of famous inventors before them and see how their ideas have changed the world in which we live. Children are much more willing to take creative risks when they discover there is no such thing as a bad idea."

This is a vital part of the program, according to O'Brien. "This program is providing opportunities for expression and creativity for all students, including those who might have never received recognition for their accomplishments.

Every child can participate and feel successful regardless of background, academic standing, physical abilities, from special ed to gifted and talented. INVENT AMERICA! levels the playing field and gives all students a chance to feel good about themselves. Every student is a winner in INVENT AMERICA!"



INVENT AMERICA! is a program of the non-profit United States Patent Model Foundation. Funding for the program and contest awards are provided by corporate sponsors and private contributions.

HOW TO START AN INVENT AMERICA! PROGRAM IN YOUR SCHOOL

Send for a free INVENT AMERICA! starter kit which contains everything necessary to begin— including student, teacher, and administrator handbooks, and contest entry forms. Kits are free, but please include $2.95 for postage and handling. To obtain a copy of the Creative Resource Guide, include an extra $2.50. Send check or money order to: INVENT AMERICA!, 510 King Street, Suite 420, Alexandria, VA 22314, Attention: IA/GH.

INVENT AMERICA! CREATIVITY WORKSHOPS

INVENT AMERICA! offers an exciting series of national and regional conferences/workshops for educators. Parents are also welcome to participate! Workshops focus on the latest techniques to help children develop creativity and higher level thinking skills. Inservice programs are also available for schools. Write INVENT AMERICA! for details, Attention: Conferences.

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IS YOUR CHILD CREATIVE?

Helping Creativity Flourish

"Imagination is more important than knowledge, for knowledge is limited, whereas imagination embraces the entire world."

Albert Einstein

"Everyone is born with the ability to become creative," says Joyce Jontune, Executive Director of the Creative Association in Minneapolis. As Gil Rowe, a Maitland, Florida child development professional states, "all children are naturally curious - and that's the first step toward creativity. As children take what they learn and develop their own ideas, parents should support those ideas and encourage kids to have goals." Rowe sees self-esteem and creativity as mutually nurturing. Giving a child freedom to create something establishes self-esteem, which in turn leads to more creativity. "Once a child feels good about herself because of something she's accomplished, she can expand her possibilities through imagination."

NURTURE A CHILD'S IMAGINATION

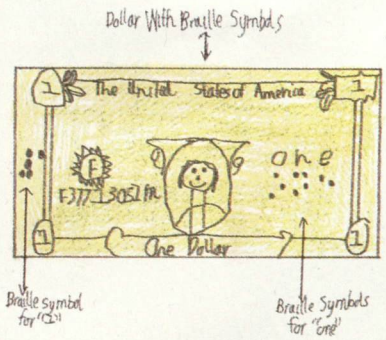
At an early age, a child feels that he can be whatever he wants to be; the whole world is open to him. It is only later—if his natural creativity has been stifled—that doubts, even lack of interest sets in. It is a parent's job to help a child hang on to that early, almost inborn, self-confidence and encourage the kinds of ideas that will solve a problem, fulfill a need, or make something beautiful.

LET A CHILD MAKE MISTAKES

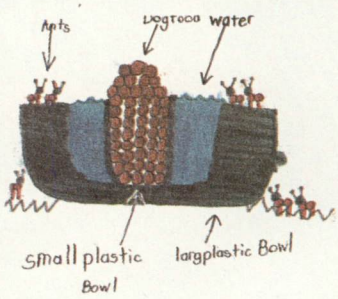
Karen Willoughby, INVENT AMERICA!'s 1990 Educator of the Year, from Fairfax, Virginia, advises that, in order to foster creativity, parents have to understand what stifles it. "There is such a thing as helping too much. With the best intentions, a parent can get in the way by not giving a child free rein; it is better to let him make mistakes than to take away his initiative."

Another stifler is evaluating something a child is working on too soon. A parent, looking at a project from the perspective of experience, could squelch it with a remark like, "that looks like it's going to be a problem." A better comment would be, "gee, tell me how that works," or "what would happen if you were to do this?"

"Watching what a child does too closely can be limiting," says Willoughby. Other creativity-inhibitors she cites are: restricting choices more than is necessary; fostering competition—pitting one child against another; and offering rewards. Instead, kids should be encouraged to experience the intrinsic reward of having accomplished something. Have him talk about what he's done and how he feels about it. Parents should talk, too. It's important that they share experiences with their children. . . talk about their own accomplishments (they don't have to be major ones), and failures. "Show your child that you do things for their own sake—and that's the reward—instead of doing things just because you're going to be given something," says Willoughby.



DOLLAR WITH BRAILLE SYMBOLS
Tait Biesinger, GA



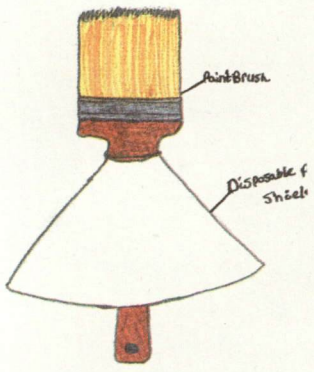
ANTS BEWARE DOG DISH
Drew Kornegay, TX

GIVE CREATIVITY TIME AND SPACE

Most of all, these educators agree, give kids time to work out their ideas and give their imaginations a chance. As Jontune says, "The key is to light the spark and fan the flames often."



SIDE WINDOW WIPER
Jennifer Gove, TX



DISPOSABLE PAINT SHIELD
Stacye White, MO

7 BLOCKS TO CREATIVITY

1 LACK OF SELF-CONFIDENCE. An adult can help instill confidence by respecting a child's ideas and efforts. Once he's experienced accomplishment, self-confidence will grow.

2 TENDENCY TO CONFORM. Let a child know that the "different drummer" of Thoreau fame is perfectly okay to listen to. In fact, it is desirable to break away from what everyone else is doing.

3 EXCESSIVE ENTHUSIASM. When a child's enthusiasm is untempered by thought in the early stages of a project, the tendency is to rush it—which can lead to abandonment if success isn't immediate. An adult should encourage a child to think the project through.

4 SATURATION. Being subjected to too much of any one thing diminishes original thinking and imagining. Expose your child to cultural events. Suggest new games and activities.

5 EMOTIONAL NUMBNESS. A child must feel good about himself and those around him in order to develop ideas. Encourage him, by your example, to respect other people's ideas. Praise freely.

6 LACK OF IMAGINATIVE CONTROL. People who think they are not imaginative hold themselves back from a vital step in the creative process.

7 NEED FOR FAMILIAR, HABIT-BOUND THINKING. Encourage thinking in new ways. One of Gil Rowe's methods is having kids put together a special jigsaw puzzle designed with the straight edges on the inside; for this, old ways of putting the pieces together just won't work.

Compiled by the Center for Studies in Creativity at the Buffalo College of the State University of New York





Kmart Salutes INVENT AMERICA!™

Tomorrow's leaders are in today's playgrounds. That's why K mart is proud to be the sole retail sponsor of the U.S. Patent Model Foundation's INVENT AMERICA!™ program. This nationwide non-profit education program invites children in kindergarten-8th grade to design inventions aimed at solving everyday problems in the world. The competition encourages creativity, while improving their problem-solving abilities. Everyone's a winner when we inspire our children to succeed!

For a free starter kit write: INVENT AMERICA!™, 510 King Street, Suite 420 Alexandria, VA 22314. Include 2.75 for postage/handling



K mart congratulates Julie Dolly, winner of the first K mart-sponsored INVENT AMERICA!™ Environmental Contest. Julie, a 4th grader from Vaughn Elementary in Vaughn, Washington, invented an "Easy-off Label" to prepare cans for recycling. As the Grand Prize Winner, Julie received a trip to Washington D.C. where she was awarded a trophy, earth book and a $1000 savings bond.

INVENT AMERICA!™ was developed by the non-profit U.S. Patent Model Foundation

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PARTNERS IN EDUCATION

Parents, Businesses, and Civic Groups Extending Resources Beyond the Classroom

Faced with limited resources and a growing education crisis, more and more schools are seeking support from parents, businesses, civic groups, and nonprofit organizations.

Parents are not just offering their services at bake sales and fundraisers either—they're offering their professional skills to supplement and enhance the education experience—helping teachers teach.

Fran Cecelia of Baldwin Borough, PA, working mother of INVENT AMERICA! winner Elizabeth Ann, comments, "Often both parents work today so we immediately identify with problems in finding skilled, properly educated workers. We're alarmed that kids are not getting the education they need and we know that schools cannot do it alone. We need to help."

Parental involvement is essential to INVENT AMERICA! Our materials suggest different ways parents can participate—such as encouraging kids to feel free to express their ideas; helping them build models; assisting at events to display children's inventions; and sharing their skills and expertise. For example, San Francisco patent attorney Virginia Medlen recently invited her daughter's class to her office at Limbach, Limbach and Sutton to learn about patents and inventions firsthand from an expert mom!



(From l. to r.) Barbara Burek and Mike Grenert of PEPSI; Carl Yankowski of POLAROID; and Dick Miller of K MART, waiting to present special awards to 1990 winners.

Communities and corporations are getting involved too by adopting schools, sharing long term education goals, and loaning executives to education task forces.

As a nonprofit organization which began with start-up grants from the BURROUGHS WELLCOME FUND and DOW CHEMICAL, INVENT AMERICA! is very attuned to the importance of partnerships. In addition to financial support, here's how our sponsors help.

K MART offered its nationwide video satellite network for a 2-hour broadcast of The Great INVENT AMERICA! Think Link—a workshop for educators aired at 2,200 K mart stores the night of September 26, 1990, reaching close to 50,000 educators. In addition, K mart asked all of its 300,000 employees to help get local schools started in the program. "Our sponsorship of INVENT AMERICA! has given K mart associates the opportunity to become actively involved in their community's education system and develop a partnership with their schools," said Richard S. Miller, executive vice president for K mart stores.

POLAROID Corporation—The Polaroid Education Program (PEP) is providing more than $1.6 million in free cameras, film, curriculum materials and a creative workshop to each teacher participating in "Think Link" and at every INVENT AMERICA! regional conference. This program, which offers fresh new ways to develop creative thinking skills through photography, is tremendously popular with teachers.

LEGO DACTA—During the "Think Link" Lego DACTA—the education arm of Lego Systems—will present teachers with a free activities kit and a hands-on workshop. They'll repeat the workshop at our regional conferences. Teachers love this, because the Lego products perfectly compliment children's invention projects.

PEPSI-COLA Company has provided hundreds of awards for kids and teachers, encouraging its network of bottlers to participate at local ceremonies, making awards presentations very special to all participants. Also, Pepsi provides free refreshments and gave mugs at our "Think Link."

KIWANIS International chose INVENT AMERICA! in 1987 as a "major emphasis program." Members nationwide work with participating schools, judge contests, stage events, and share their skills with students.

The DISCOVERY CHANNEL is honoring INVENT AMERICA! winners in an October segment of its "Invention Series;" MASTERCARD provides support through an INVENT AMERICA! credit card; IBM presented 1990 national winners with IBM PS/1 home computers, and IBM PS/2 computers to their teachers; BOEING Corporation offered materials and personnel to help several Washington state schools; AMERICAN Airlines issued complimentary tickets to many students, parents, and educators traveling to INVENT AMERICA! Week; and QUAKER OATS provided tasty treats for several events.

These are special relations. Financial support is important of course, but just as important are the philosophical rewards these relationships provide. In building partnerships, look for common interests, make sure everyone benefits, and above all, appreciate your education partners and let them know it!

Marcia Schiff, Director of PEP and the Polaroid Foundation says, "We love this partnership with INVENT AMERICA! We share the same goals. . .and it feels like family!"

Thanks, Marcia, we couldn't have said it better!



Bill O'Neill of POLAROID with recipients of new POLAROID cameras.

Author Nancy J. Metz is executive director and a founder of the United States Patent Model Foundation

This is the dog





That rang the bell

That woke the chief





That lives in the firehouse

That _____ built.
(child's name)

duplo
Ages 3-5

The New DUPLO® Fire Station. **Only from LEGO.® Imagine that.**

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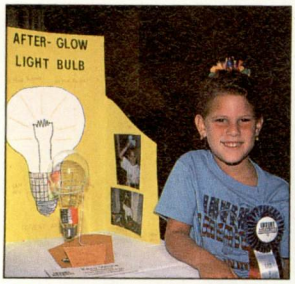
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The 1990 National Winners



Secretary Cavazos looks on as teacher Brooke Cooley and principal James Jordan congratulate their national winner Sarah Cole Racine.



Kindergarten AFTER-GLOW LIGHT BULB *". . .keeps kids and grandparents from falling over things or bumping into walls and furniture after they turn off the lights at night."*

Kacy White, Louisville, KY



1st grade - THE STOP CART

". . .stops carts from rolling into cars, or rolling away while in store parking lots."

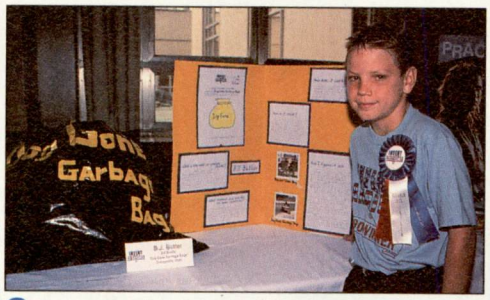
Jon Paul Nielsen, Golden, CO



2nd grade - FOOD TAPE

"Food Tape is wrapped around food to keep it from unwinding and falling apart. It comes in lots of different flavors."

Sarah Cole Racine, Carnation, WA



3rd grade - DOG GONE GARBAGE BAGS

"There's a special animal repellent built right into the garbage bags so you can leave them outside and dogs won't tear them up."

B.J. Butler, Orangeville, UT



4th grade - "I NEED MORE" STICKERS

"It's a sticker manufacturers place on products. . .when you run out of something, peel off the sticker and place it on your shopping list."

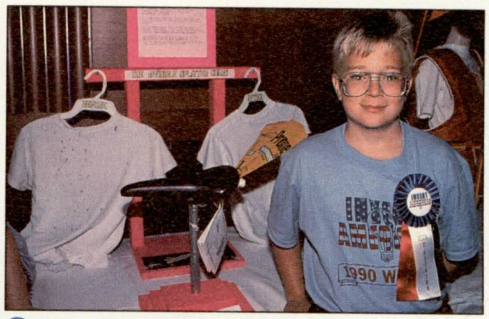
Jonathon David Merickel, Willmar, MN



5th grade THE GUARDIAN ANGEL

"A smoke detector and fire extinguisher hidden in the angel will help prevent Christmas tree fires."

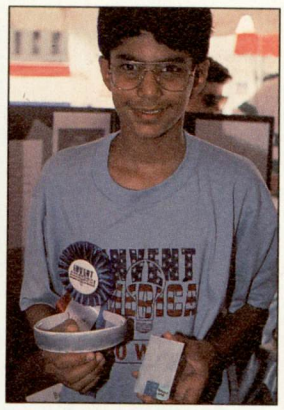
Elizabeth Ann Cecelia, Baldwin Borough, PA



6th grade - INVISIBLE SPLATTER GUARD

"My invention keeps bike riders from being splattered with dirt, mud, and water from the back tire when it rains."

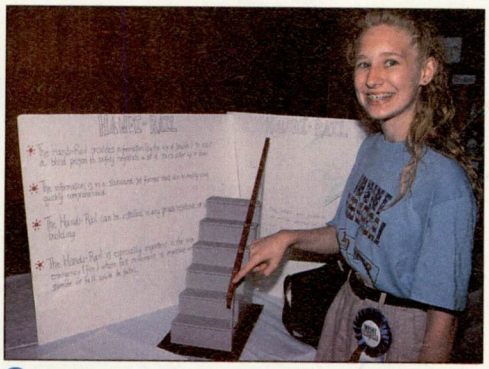
Kevin S. Triphahn, Post Falls, ID



7th grade ANTI SUNBURN BAND METER

". . .it lets people know when to get out of the sun and prevent skin cancer."

Aamir Raza San Jose, CA



8th grade - HANDI-RAIL *"...can help blind people reach the top or bottom of stairs without tripping or falling."*

Katherine Ann Szudy, Parma, OH

Office of the Chairman

INVENT AMERICA!

All kids are born winners

...yours...mine...the kids down the block. They come into this world filled with creativity and curiosity. It's up to us to keep them that way.

INVENT AMERICA! mixes parents' involvement, teachers' dedication, lots of incentives, and exciting education materials to help the natural creativity all kids have to blossom.



A young person with a growing spirit of America ingenuity is developing the skills he or she will need to lead our nation into the forefront of the 21st century's competitive world marketplace.

We need your support to make all of this happen. The non-profit INVENT AMERICA! program relies completely on public support.

BECOME AN INVENT AMERICA! INVENTOR MENTOR.

- ★ $ 5.00 teases the minds of 10 kids
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- ★ $25.00 has the imaginations of 50 kids soaring
- ★ $50.00 ignites the wonder and curiosity of an entire school

PLEASE JOIN US! Send your tax deductible contribution to: INVENT AMERICA! 510 King Street, Suite 420, Alexandria, VA 22314. To charge your contribution on your Visa/Mastercard, just call (703) 684-1836 and say "Eureka."

INVENT AMERICA!, our kids, and America thank you!

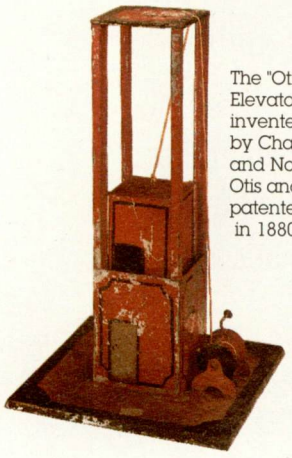
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A LOST AMERICAN TREASURE

"Let us rekindle that pioneer spirit of American ingenuity which the models represent. And let's work together to get them back to The Smithsonian..."

George Bush at the Smithsonian Institution, June 19, 1986



The "Otis Elevator," invented by Charles and Norton Otis and patented in 1880.

In 1925, with the slam of a gavel, Americans were deprived of a national treasure. It was then that our nation's collections of original 19th century patent models were sold at auction to the highest bidder.

The collections consisted of more than 100,000 models of America's earliest patented inventions including the works of such great inventors as Edison, Heinz, Westinghouse, Otis, and Singer to name a few.

Patent models represent a brief but significant moment in American history. The Patent Act of 1836 decreed that along with the application, inventors had to submit a model of their invention. For the next three decades the patent office was deluged with applications for patents of every conceivable nature, each accompanied by the required model. Many inventions were complex, mechanical devices that would change the world—some were whimsical flights of fancy.

Of those halcyon years, Douglas Evelyn, Deputy Director of the Smithsonian's National Museum of American History, says, "The pace of American invention was a marvel of the age." From 1790 to 1860, the United States granted more patents than England and France combined, causing English government leaders to worry that most inventions were originating abroad, especially in America.

Eventually the models outgrew their space, overtaking every available nook and cranny of the patent office building. The requirement for models was rescinded in 1870, but they continued to arrive at the rate of some 14,000 per year. By 1876 the collection of patent models peaked at 175,000. Cabinetry to house them had become hopelessly inadequate and thousands had found their way into attic storage.

What was once the patent office's source of pride became its albatross. Plans were made to dispose of them. In 1907, Congress ordered the models moved into storage, and in 1925 with storage charges mounting, an austerity program forced their sale as government surplus.

According to Evelyn, "The Smithsonian, which had over the years begun to acquire selected models for its own collections, was given a brief opportunity to select some 2,500 models prior to the sale. However, the vast number of models and the pressures of time made systematic selection for retention out of the question."

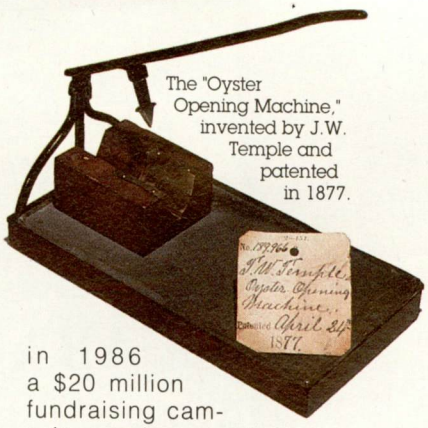
During the past sixty-five years, the Smithsonian has acquired several thousand additional models, making its collection by far the largest public holding, in excess of 10,000. Its National Museum of American History has become the primary center for the preservation, study and exhibition of patent model collections.



The "Milk Cooler," invented by J. Meserole and patented in 1884.

Today, it seems inconceivable that such rare and important collections could end up in private hands. Historians generally agree that the sale of the patent models was, at the very least, short-sighted.

In 1984, the nonprofit United States Patent Model Foundation was organized to assist the Smithsonian in recovering the remaining models, and in 1986 a $20 million fundraising campaign was launched to acquire the models, erect a research and restoration center at the Smithsonian, and provide funds to care for them in perpetuity.



The "Oyster Opening Machine," invented by J.W. Temple and patented in 1877.

To date, approximately 35,000 models have been recovered from the original collection— a gift from California aerospace engineer, Cliff Petersen. Much, however, remains to be done. A sense of urgency propels this effort, for many models are almost 150 years old and in dire need of proper museum restoration.

In summary, Evelyn notes, "This effort could not have taken place at a more appropriate time. There is an important job to be done, and only with the support of the United States Patent Model Foundation and the American public will this museum be able to take the steps necessary to preserve these important collections and make them a resource for public edification and research."

Author J. Morgan Greene is chairman and a founder of the United States Patent Model Foundation. Tax-deductible contributions to support this project may be sent to U.S. Patent Model Foundation-Smithsonian Project, 510 King St., Suite 420, Alexandria, VA 22314



The "Apparatus for Rendering Tallow," invented and patented in 1866.

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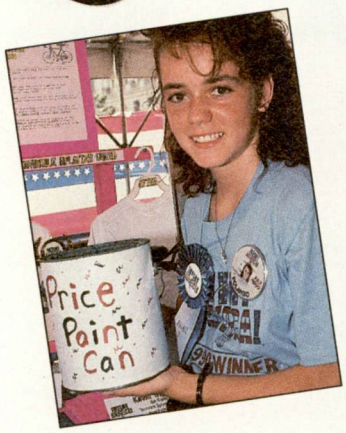
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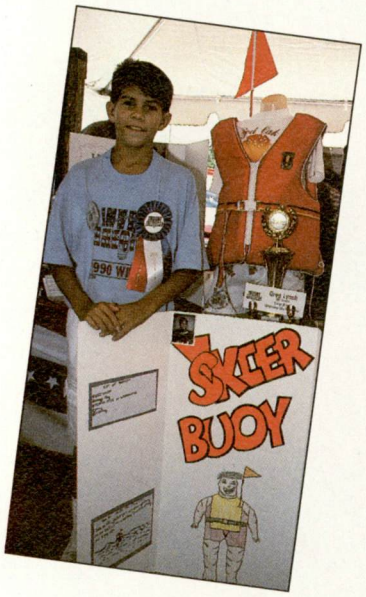
H3 16



KIDS
What Will They Think of Next?







TOP RIGHT: Winner of Good Housekeeping's "Best Invention for the Home" Award Clarence Reed of DE, with his "Enviro Litter Critter."

TOP LEFT: Rachel Price of KY—"Price Paint Can."

LEFT CENTER: Greg Sharp of OK—"Skier Buoy."

Did you know a fifteen year old boy invented earmuffs in 1873? Young Chester Greenwood of Farmington, Maine was plagued by ears that turned purple in the cold New England winter. Eager to try out his new ice skates, Chester took some baling wire, covered it with beaver fur and velvet, and went off skating with his "earmuffs" to keep him warm. The idea caught on, and Chester's family was soon spending its spare time cutting, sewing and bending wire to fill orders. The business prospered, and Farmington became known as the "earmuff capital of the world."

There have been many other famous inventions by kids. George Ferris Jr. thought of his Ferris Wheel when he was in elementary school. Levi Strauss was a teenager when he made and sold the first pair of Levi Jeans. And two friends with the same first name, Leopold, first began inventing color camera-film in their high school physics lab.

Are today's kids as resourceful as Chester Greenwood? In our world of instant solutions - fast food, microwaves, automatic teller machines - are kids willing to spend the time and energy to develop new ways to solve problems? Ask any of the millions of INVENT AMERICA! students across the country and the answer is a resounding "YES!"

INVENT AMERICA! participant Larry Villella, assigned the chore of watering newly-planted trees in his yard, had trouble figuring out how much water they needed. So, the Fargo, North Dakota 11-year-old took an old circular sprinkler from the garage and turned it into the "Conserve Sprinkler," a c-shaped device that delivers water directly to the tree's root system, and uses 30% less water than a standard sprinkler. He was named the sixth grade winner from his school.

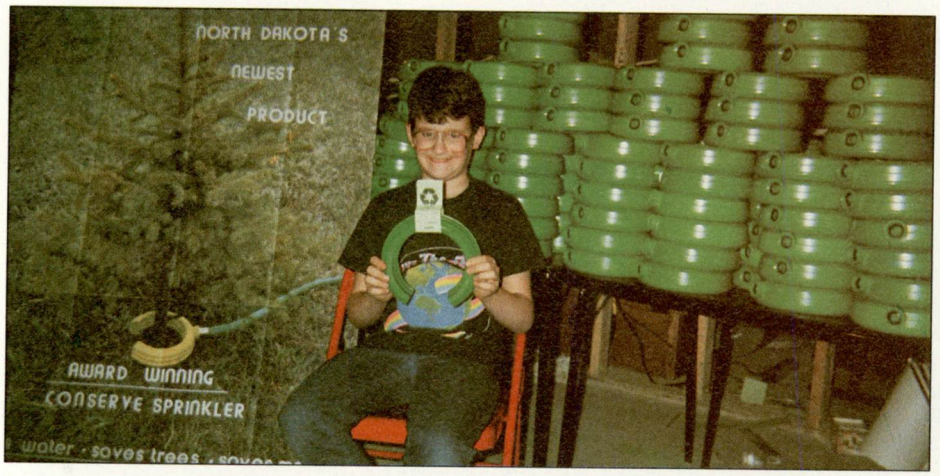
With help from his parents, Larry recently founded the ConServ Products Company and began manufacturing. His first customers included North Dakota's Governor George Sinner, Congressman Byron Dorgan, Senator Kent Conrad, Senator Quentin Burdick and Mayor Jon Lindgren.

Another INVENT AMERICA! participant, David Sharp of Chippewa Falls, Wisconsin, is hoping to hear soon that a patent has been granted for his "Slick Stick." David, one of nine 1989 INVENT AMERICA! national winners, developed this "non-slip walking assist device" to help his mother who has multiple sclerosis. David proudly explains, "It gives people who use a cane freedom to walk safely on most surfaces with just a touch of a button. My mother isn't afraid to go out in the winter since I made this for her."

After watching her parents paint a room, Rachel Price of Boston, Kentucky found a way to contain the mess. Her "Price Paint Can" has holes around the rim so "when you run the paintbrush over the top to get rid of excess paint, the paint runs back down through the holes." Presto, no more paint dripping down the sides and onto the floor. Rachel was a 1990 regional INVENT AMERICA! winner.

According to INVENT AMERICA! Chairman J. Morgan Greene, inventing encourages kids to let their imaginations soar. "Each year we're amazed at the results and the range of ideas. Some are very practical, some are really humorous, and some show a sensitivity to the needs of others that's truly inspiring. We feel strongly that any child who applies their ingenuity to solve a problem already is a winner."

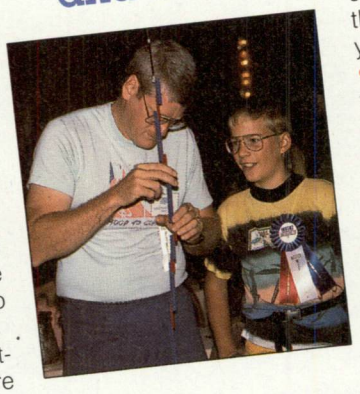
By Steven Caney, the award-winning children's author of Invention Book, Toybook, Playbook, *and* Kids' America.



Larry Villella of ND—"Conserve Sprinkler."

ACTIVITIES

to Stimulate and Develop Creativity in Children and Youth



Find other uses for common objects: What else could a spoon be used for? What are other things that could be done with a chair besides using it to sit on?

• **Try to think of unusual ideas:** Where are some common places to find water that most people would think of? Where are some unusual places to find water?

• **Think of alternative ways to solve a problem from a book or story:** How else might Goldilocks have found out which porridge was "just right" without tasting all of them?

• **Put yourself in a book or story as one of the characters:** Who would you be? What would you do? How would you change the story?

• **Think up questions about topics of interest that cannot be easily answered:** What questions could you ask about ????? that you do not know the answer to? Star your five favorite questions. Set aside an afternoon to find the answers to these questions.

• **Make plans and follow them:** Plan a Saturday afternoon with your friends. Make sure the activities are approved by your parents and of interest to your friends. Follow your plan. How would you change your plan another time?

• **Read stories about the lives of interesting people:** What do you admire about that person? Do you have any of the same characteristics or traits as the person in the book?

• **Compare and contrast objects and ideas:** How are a suitcase and mouse alike? How are they different? How is your favorite song like your bed? How is it different?

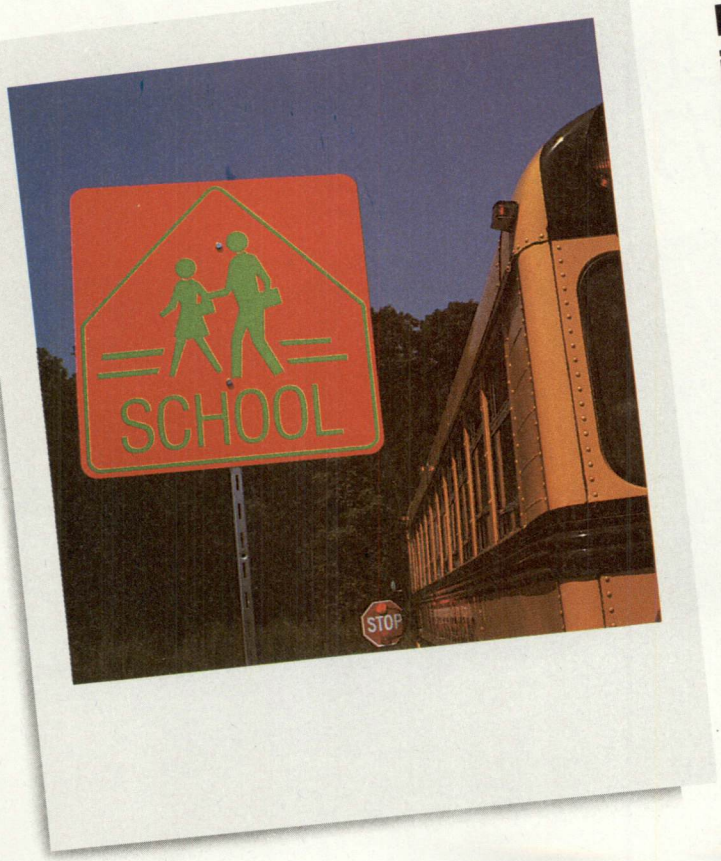
• **Look for patterns in objects and nature:** What patterns do you see in the houses in your neighborhood? Describe the patterns you find in your back yard or walking on the sidewalk. Make up some patterns of your own that could be used in your room or around your yard.

• **Try new things:** Think of something you would like to learn how to do. Plan a way to experience it or learn how to do it. Plan to try one new thing every month. These can be small things such as volunteering to help a neighbor or friend do a job that is new to you, or joining a new club at school.

• **Express your ideas and feelings:** Put them on paper, in a painting, in music, in a sculpture or in a song. This does not have to be shared with anyone else. It is just for you.

• **Find the good parts to an idea first:** What are three good things about that idea?

by Joyce E. Jontune, Executive Director, American Creativity Association



Presenting a concept in education that's picture perfect.

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TODAY'S INVENTORS

America's Spirit of Discovery Lives On

"Congress shall have the power...to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries..."
U.S. Constitution

So begins the 1790 Patent Act, set forth in Article I, Section 8 of the United States Constitution. This year, the nation celebrates the bicentennial of this patent act—which Lincoln later said, "adds the fuel of interest to the fires of genius." And, if there are any traits characteristic of Americans during the past two centuries, it is our creativity and entrepreneurial spirit.

Established in 1973, the National Inventors Hall of Fame identifies and inducts members into its roster of distinguished American inventors. Beginning with the early "greats" such as Edison, Bell, Morse, the Wright Brothers, Goodyear, Pasteur, and Westinghouse, the list of inductees grows each year.

This American inventors' list of "Who's Who" is a continuum of accomplishment throughout the centuries, yet most inductees have come from diverse backgrounds in virtually unrelated fields, prompting us to ask, "is there a common thread, some unique quality that links them?"

Recent conversations with current-day inventors provide some insight.

RAYMOND DAMADIAN—MRI SCANNER

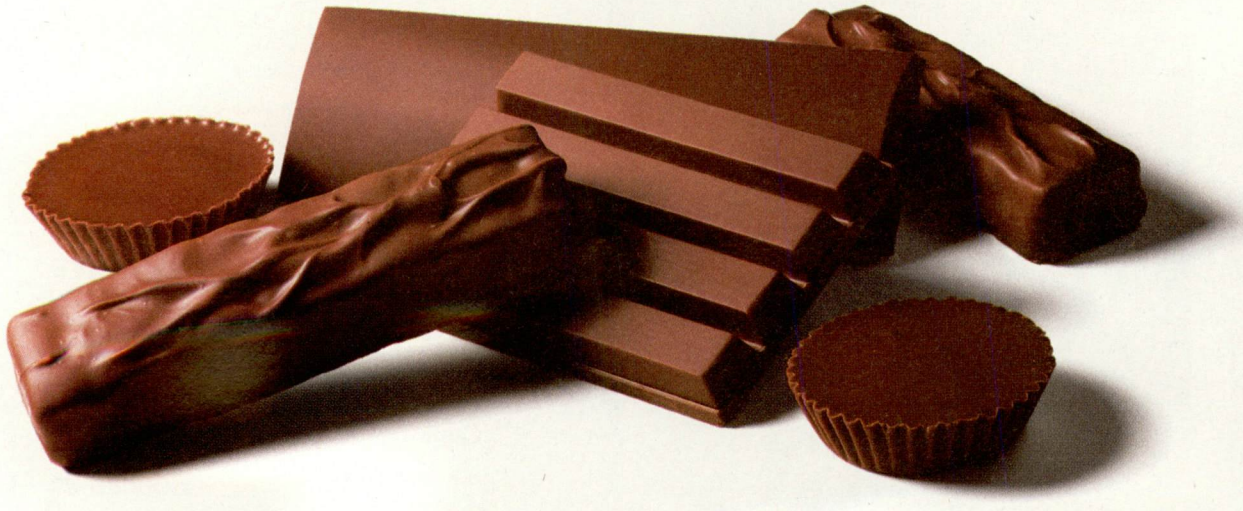
Dr. Raymond Damadian, a 1989 inductee into the Inventors Hall of Fame, developed the Magnetic Resonance Imaging (MRI) scanner, which is revolutionizing the field of diagnostic medicine. Using the static and dynamic magnetic fields of the body, the invention produces a far more detailed image of the body interior than is possible with X-ray devices. Having attended the Juilliard School of Music before pursuing medicine, Damadian takes a diverse approach to the invention process.

In a recent discussion with several other inventors he stated, "I think the thing that matters most is not so much what you are doing but the spirit in which you are doing it. I am sure we all share, from the time we were young, an excitement about discovery, and about doing something new—the promise of having a dream or vision of the future."

ANNE MACDONALD—THE GREAT SCOT ARGYLER

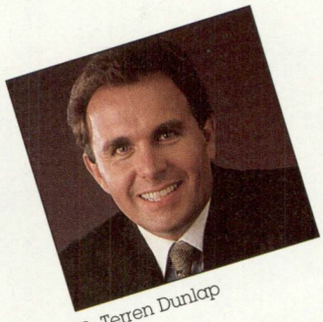
Anne Macdonald shares Damadian's diversity of approach and excitement about discovery. A writer and historian, Macdonald counts among her accomplishments the development of the Great Scot Argyler, a device to simplify the design and knitting of argyle patterns in socks and sweaters. Macdonald invented her device when she was only 17, but waited until her 60's to seek a patent, finally taking the step because, "you want credit for your accom-

A Quaker Chewy® Granola Bar has 1/3 less sugar,



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plishment." She joined a select group of women patentees which make up only 5.5% of all residing American patent holders. On the spirit of discovery, she comments, "the idea of inventiveness is 'try it!' Learn to wonder, conjecture, play with ideas."



R. Terren Dunlap

STEPHANIE LOUISE KWOLEK—KEVLAR®

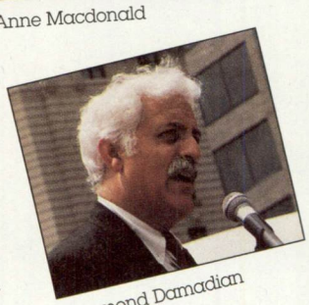
The courage and willingness of Stephanie Louise Kwolek to wonder led to an amazing discovery and a nomination to the Inventors Hall of Fame. She created "Kevlar," a fiber with five times the strength of steel, now used in common products, from radial tires and bullet-proof vests, to sophisticated applications such as military and space vehicle construction. "Curiosity and acute perception identify an aspiring inventor," Kwolek maintains. "You must develop the ability to notice the unusual." Throughout the invention process, Kwolek endured the skepticism of her colleagues; she cites persistence as an essential attribute of the successful inventor. "You must repeat and repeat and repeat until you have the problem solved. . . you cannot be discouraged."



Anne Macdonald

R. TERREN DUNLAP—THE VCR-2

R. Terren Dunlap also believes that persistence is important. Inventor of VCR-2, the first American-designed, developed, and patented dual-deck videocassette recorder, Dunlap first got his idea during an entrepreneurial sabbatical after practicing law for six years. His hopes and passion for manufacturing and marketing his device put him at direct odds with the electronics cartel. However, with $60,000 borrowed against six personal credit cards and his deep-rooted conviction he had a product that the public needed, he persisted. It paid off. Today, his VCR-2, a single VCR which allows high-clarity tape duplication, editing, and simultaneous two program recording, is a sought-after consumer product. Remembering the skeptics, Dunlap says with pride, "Everything we've done, they said we couldn't do. Best of all, we've put America back in the electronics race."



Raymond Damadian

Each inventor fosters a unique approach to the invention process and has a widely diverse background and range of interests, but the love of discovery links them in a common bond of modern day ingenuity.

By recognizing these true national heroes, and by inspiring a new generation of inventors and scientists to follow in their footsteps, we pass on the torch of innovation, creativity, entrepreneurship, and competitiveness—a 200-year American tradition and a celebration of the human spirit of discovery.

Author Allen R. Jensen is the President of the National Inventors Hall of Fame, and Chairman-elect, National Council of Intellectual Property Law Associations.

which makes that candy seem a little less dandy.



Enlarged illustration

Compared to the five leading chocolate candies, an average Quaker Chewy Granola Bar has, ounce for ounce, 1/3 less sugar and 1/3 less fat. And it comes in eight delicious, wholesome varieties your kids will love, like Raisin & Cinnamon, Peanut Butter, and Strawberry. So bag a better lunch with Quaker Chewy. Because all that sweet stuff isn't quite such neat stuff.

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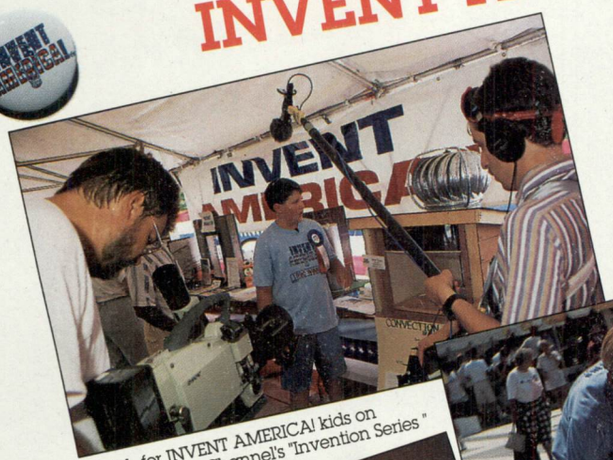


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INVENT AMERICA! WEEK



Watch for INVENT AMERICA! kids on the Discovery Channel's "Invention Series" this October.



Karen Willoughby—named 1990 Educator of the Year. 1989 winner Gil Rowe, looks on. J. Morgan Greene, Secretary of Education Cavazos, and Kevin O'Brien in background.



Proud Washington state delegation with sponsor Boeing Corporation's John Hayden.



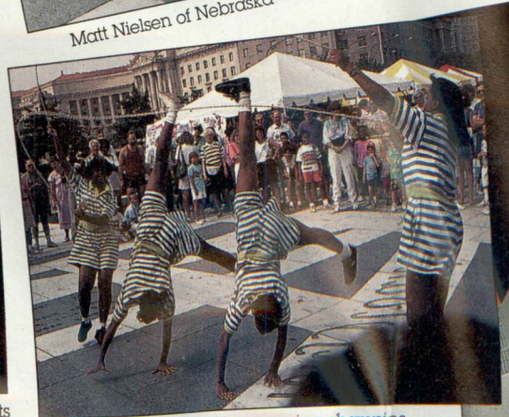
Matt Nielsen of Nebraska—"Bike Board."



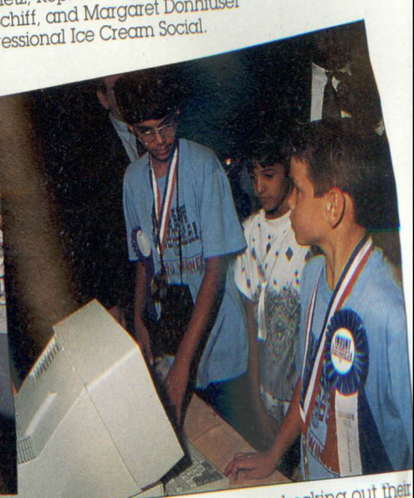
Nancy Metz, Rep. Matthew Rinaldo, Marcia Schiff, and Margaret Donhiuser at Congressional Ice Cream Social.



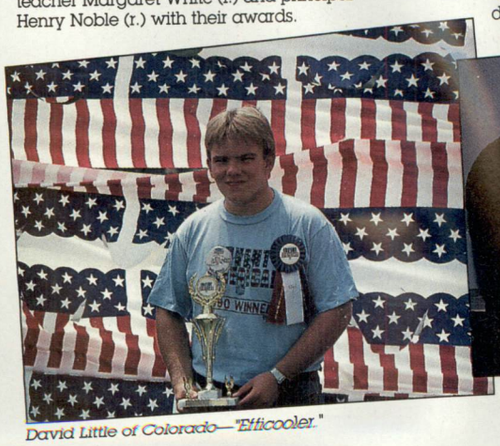
INVENT AMERICA!s Kevin O'Brien (c.) presents teacher Margaret White (l.) and principal Henry Noble (r.) with their awards.



Double Dutch jump roping champions dazzle crowds at Opening Day Celebration.



Excited national winners checking out their new IBM PS/1 computers.



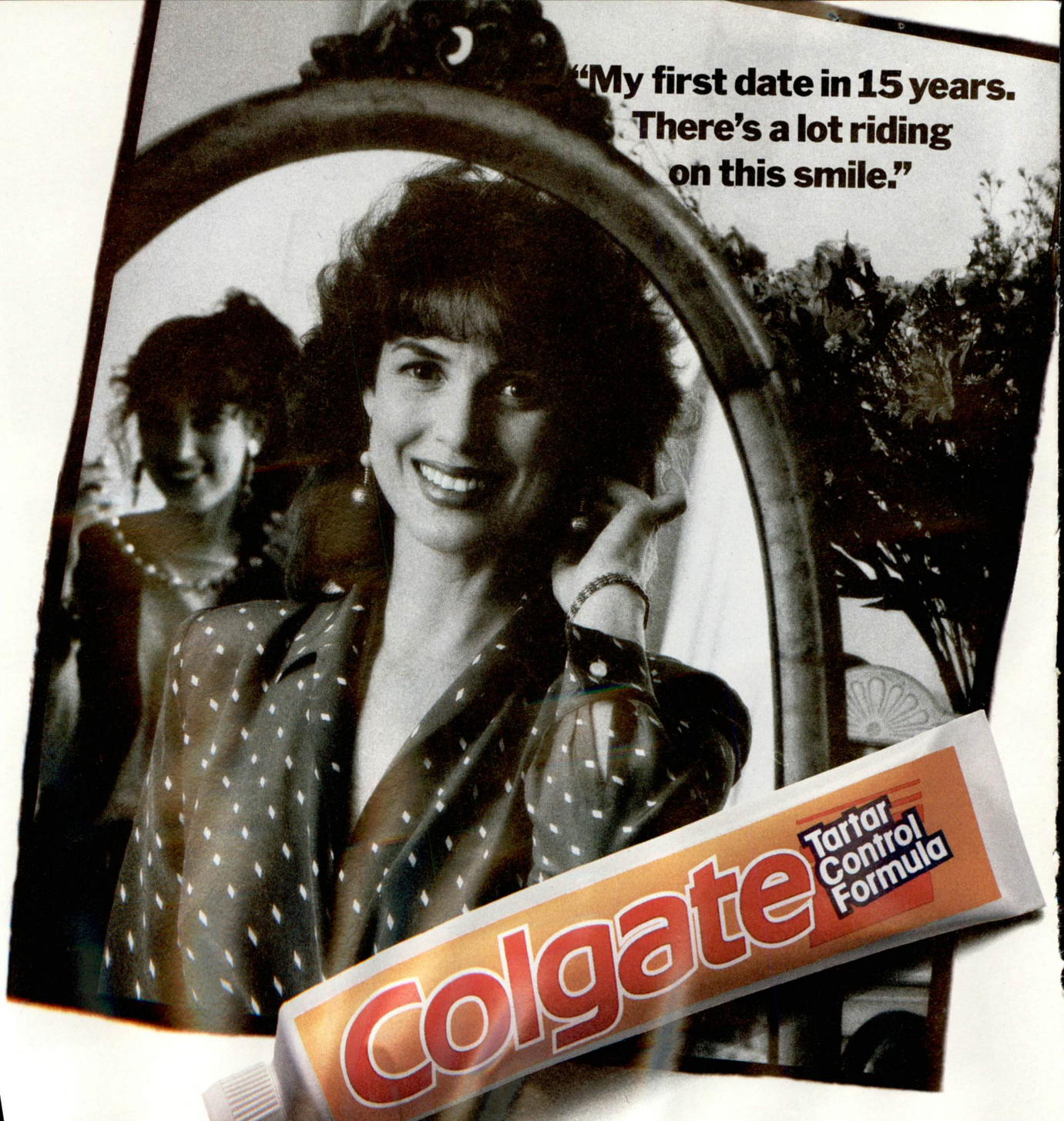
David Little of Colorado—"Efficooler."



Good Housekeeping Publisher Alan Waxenberg with GH award winner Clarence Reed and the Delaware delegation.



The crowds jostling to see the 1990 award-winning student inventions on public display in Washington, DC.



Colgate Tartar Control Formula

40 and dating again.
Made me take a really good look at myself.
And my smile just didn't look clean.

I had my dentist remove the tartar.
Seems tartar traps stains. He said
Colgate Tartar Control would help keep it off.

Did it ever. My teeth feel smoother. Cleaner.
Got my old sparkle back.



BECAUSE YOUR SMILE WAS MEANT TO LAST A LIFETIME.

...has been shown to be an effective decay-preventive dentifrice that can be of significant value when used in a conscientiously applied program of oral ...ular professional care. Colgate Tartar Control has been shown to reduce the formation of tartar above the gum line, but has not been shown ...effect on periodontal diseases."—Council on Dental Therapeutics-American Dental Association. © 1990 Colgate-Palmolive Co.

INVENT AMERICA!™

GOOD HOUSEKEEPING PRESENTS

BRINGING BRIGHT IDEAS OUT OF YOUNG MINDS

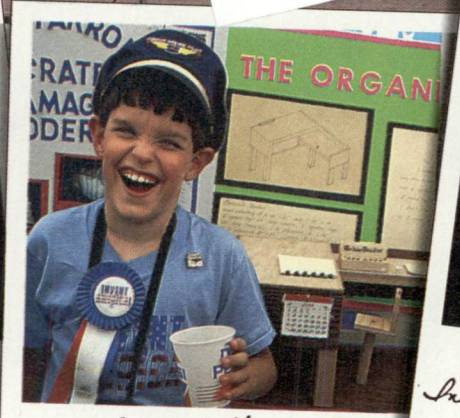
CELEBRATING ITS 5TH YEAR



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Sock stained with grass and mud
Washed in ordinary liquid detergent
Washed in New Liquid Tide with Bleach Alternative
New Tide Out-Whitens Other Liquids By A Foot
New!
Tide
Whitens Without Chlorine Bleach!
with Bleach Alternative
It'll knock your socks off. And get 'em whiter.
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INVENT AMERICA!

Bringing bright ideas out of young minds

More than fifty squirming, giggling kids stand on a stage in the hot Washington, D.C. sun. They clutch freshly-presented trophies and as the applause rings out, they grin for the television cameras. Soon they hurry off to take their places amidst a mind-boggling array of inventions that have earned them a visit to the nation's capitol to celebrate National INVENT AMERICA! Week—complete with congratulations from the President of the United States.

The press and public jostle and microphones are shoved forward as the kids, ranging from five to thirteen years of age, begin fielding questions and presenting their ideas with an aplomb many an adult would envy. Over and over again, adults are heard to comment, "Now why didn't I think of that?"



Kids having fun inventing crafts during INVENT AMERICA! Week.

These kids and their inventions have created quite a stir. Granted, the kids are bright and their ideas exciting, but why are they making national news? Are they child prodigies? Not at all. Some are gifted and talented, but most are your typical kids from any classroom across the country. A few are in special education programs, and some must rise above physical disabilities. They come from inner city and rural schools, from both affluent and poverty stricken neighborhoods.

Common to all is that they've produced an award-winning entry in this year's INVENT AMERICA! national student invention competition, the culmination of the non-profit INVENT AMERICA! yearlong education program. But the reason these children are making headlines wherever they go is, in a word, hope.

Leaders of government, business and education are placing their bets on kids like these, and backing this nationally acclaimed education program. As Secretary of Commerce Robert A. Mosbacher told the children, ". . .the nation sees in you the future of the United States." INVENT AMERICA! is a balanced mix of challenges, recognition, and incentives that helps kids develop the innovative problem-solving skills needed for an enriched and productive life in today's competitive, highly technological world marketplace.

KIDS LEARN BY INVENTING

Now celebrating its fifth year of "Bringing Bright Ideas Out of Young Minds," educators laud INVENT AMERICA! which helps kids learn by inventing their own solutions to everyday problems.

INVENT AMERICA! is a program of the non-profit United States Patent Model Foundation and is part of the Foundation's overall goal to stimulate a national rebirth of innovation and creativity amongst our nation's school children.

The Washington-based Foundation was formed in 1984 for the benefit of the Smithsonian Institution, to assist it in raising funds to recover and preserve 19th century models of earliest American patented inventions. As Douglas E. Evelyn, Deputy Director of the Smithsonian's National Museum of American History states, "The models were, and still are, symbols of an era when the United States was transformed from a developing nation in a new but abundant land to a dominant world economic power. The models still have enormous potential for inspiring and educational exhibits."

REKINDLE THE SPIRIT

The desire to find ways to rekindle that pioneer spirit lead to the development of INVENT AMERICA! And, with the collection of over 35,000 models already recovered, the Foundation now looks forward to developing exhibits of patent models as a supplemental learning resource.



Secretary of Commerce Robert A. Mosbacher with Chelsea Lanmon, and J. Morgan Greene, INVENT AMERICA! chairman

INVENT AMERICA! is supported by major corporate sponsors such as K mart, Pepsi-Cola, Polaroid, 3M, IBM, American Airlines, Boeing, AIG and others which share the concern that today's classrooms need to do more to promote this kind of hands-on learning.

PRESIDENT BUSH URGES INVOLVEMENT

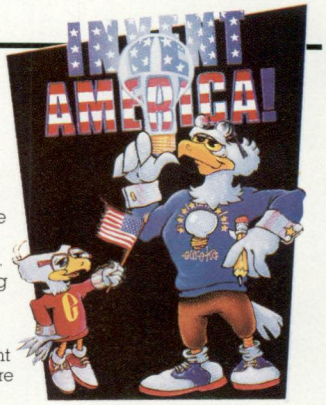
President Bush helped launch INVENT AMERICA! in 1987, and today serves as Honorary Chairman. He tells teachers and students, "America needs your new ideas," and he urges them to stretch their imaginations and creativity as famous inventors before them have.

A look around at some of the unique inventions on display during National INVENT AMERICA! Week, designated as such by the U.S. Congress, proves that indeed, these kids are the hope for tomorrow. From 7th grader Josh Nelson of Post Falls, Idaho, who invented a simple but effective device that now helps his mom fit her wheelchair through narrow spaces, to Curtis Schroeder, a 2nd grader from Lost Nation, Iowa, whose experience in raising prize-winning hogs

HOW TO START AN INVENT AMERICA! PROGRAM IN YOUR SCHOOL

You can obtain an INVENT AMERICA! starter kit with everything you need to begin the INVENT AMERICA! program, including the student and teacher handbooks and contest entry information. The kit is free but please enclose $2.95 for postage and handling. A copy of the poster (at right) is also available for $3.95 including postage. Write to INVENT AMERICA!, 510 King St., Suite 420, Alexandria, VA 22314, Attn: IA/GH91 Starter Kit.

INVENT AMERICA! is a program of the non-profit United States Patent Model Foundation. Funding for the program and contest awards are provided by corporate sponsors and private contributions.



Photographs by Mike Ficeto

prompted him to develop "The Sow Jacket" to prevent sows from catching their udders in raised cages, making it difficult for them to nurse their newborn. Some ideas seem whimsical at first glance, such as Columbia, Missouri 3rd grader Eric Bunnelle's "Dial-A-Fish," which lets him feed his fish by calling home to activate a relay-controlled vibrator that shakes food into his gold fish bowl.

But, as INVENT AMERICA! Chairman and Co-Founder J. Morgan Greene cautions, "Don't underestimate these kids' ideas. Some might seem impractical or make you chuckle but look beyond, and you'll see how they have learned to apply math, science, and research skills in developing their ideas. They have taken an abstract concept and turned it into a three-dimensional idea."

The program has also brought about another special benefit. According to Executive Director and Co-Founder Nancy J. Metz, "INVENT AMERICA! has attracted tremendous parental and community involvement because the program is so much fun, and there are so many opportunities for participation." Parents, local service groups such as Kiwanis, senior citizens, business and community leaders act as judges, share professional expertise, help with INVENT AMERICA! fairs, and provide prizes for the kids.

INVENT AMERICA! THINK LINK

To stimulate this grassroots movement, each year with the help of it's sponsors INVENT AMERICA! offers the INVENT AMERICA! Think Link, a satellite-fed training program which brings the programs directly to the nation's teachers. It features program education materials, workshops from Polaroid Corporation, and refreshments by Pepsi-Cola. K mart Corporation provides production assistance and opens its doors in 2400 communities for teachers to view the program. The Think Link gives teachers everything needed to start the INVENT AMERICA! program in their classrooms. A unique feature of this year's program is a preview of the new Jodie Foster film, "Little Man Tate." (See article in this section.)

After five years, Greene and Metz are excited by the results so far, but say they won't be satisfied until every child in every classroom is involved, "There's more to be done. We want every child to feel the excitement and success that comes from this kind of learning experience."

CHEW THE RIGHT THING



If your kids love the taste of bubble gum, they'll love creamy new Del Monte® Bubble Gum Pudding. And so will you. Because it's a wholesome snack made with skim milk. Also try new Chocolate Peanut Butter Pudding. They're only from Del Monte.

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WHO SAYS AMERICAN CHILDREN CAN'T COMPETE?

These two international winners have what it takes!

Who says American school children don't have what it takes to compete globally? INVENT AMERICA! students were recently invited to represent the USA in an international competition of young inventors, competing with hundreds of finalists from more than 30 countries. How did we do?

Just ask new INVENT AMERICA! international stars 14-year old Brad Bolerjack of Lockport, Illinois, inventor of "Jables Careful Jumper Cables," and "Braille Rail" inventor Katherine Szudy, 15, of Parma, Ohio. Each received top awards in the international competition and were among the eleven students worldwide who were invited to travel to Japan to participate in a formal exhibition and commendation ceremony. Held in Tokyo in March 1991, the 4th World Exhibition of Young People's Inventions was sponsored by the Japan Institute of Invention and Innovation (JIII), in cooperation with Japan's Ministry of International Trade and Industry (MITI) to help promote scientific, technological and cultural exchange among the children of the world. The ceremonies were officiated by JIII Honorary Chairman, His Royal Highness Prince Hitachi, who presented the awards to Brad and Katherine.

No strangers to success, both Brad and Katherine had previously traveled to Washington, D.C. to take national honors in the INVENT AMERICA! competition prior to receiving international acclaim. Brad was the 1989 6th grade winner, and Katherine, the 8th grade 1990 winner.

Katherine is in the process of patenting her invention. She originally became interested in inventing when assigned INVENT AMERICA! as a school project. While watching TV, Katherine saw a blind man trip and fall down a flight of stairs as others stepped over him. "If only the blind man had known the steps were there and how many there were, this accident could have been prevented." Her invention incorporates braille symbols into hand rails, letting a blind person know that he or she is about to climb or descend stairs, on which step they are and exactly how many more are ahead. Currently, Katherine's marketing representative is investigating opportunities for the "Braille Rail." Katherine suggests they be installed in airports, commercial buildings, homes, etc.

Brad Bolerjack would also like to patent and market his invention, "Jables Careful Jumper Cables." Brad's idea came to him while reading the newspaper one wintry day. It was so cold, he read that many people were getting hurt trying to jump start their cars, so he invented safe and efficient jumper cables. When Brad got the good news about his invention winning international honors, he couldn't believe it. Brad and his dad flew to Japan for the awards ceremony and when asked what he remembers most about the trip, Brad said the *long* plane ride and the *crowded* city of Tokyo. "It's a city the size of Chicago with about five or six times as many people."

Since participating in INVENT AMERICA!, both Brad and Katherine say they are much more aware of conditions around them and are always looking and thinking about ways to make things work better. Katherine says one of the best parts of her success has been her great experience traveling with her mom to Japan. Also, she would be really happy if her invention could prevent a blind person from having an accident or help them to escape from a burning building. Brad thinks the best part of this whole experience has been the excitement that came with each award—from local, state, regional, and national to worldwide recognition. Who wouldn't agree?!



The Prince & Princess Hitachi cut the ribbon to open the 4th World Exhibition of Young People's Inventions" in Tokyo.



Katherine Szudy explains her "Braille Rail" invention to Prince Hitachi during the exhibition in Tokyo.



Brad Bolerjack's "Jables Careful Jumper Cables" received a top award in the international event.

INVENT AMERICA! TO HOST NEXT WORLD EXHIBITION OF YOUNG PEOPLE'S INVENTIONS

Plans are now underway for INVENT AMERICA! to host the next World Exhibition of Young People's Inventions here in the U.S. INVENT AMERICA! and JIII are working together to set up a program in which their organizations would take turns hosting this event in future years.

Both organizations agree that it's a tremendous way to help foster creativity and innovation amongst children worldwide and are excited about pursuing these plans. INVENT AMERICA!, a non-profit organization, is currently seeking funding to sponsor the upcoming USA exhibition which is tentatively planned for late 1992.



How do you get a zoo in a bucket?

"IN THEIR OWN WORDS" FROM INVENT AMERICA! 1991 EDUCATORS OF THE YEAR

In the sprawling, culturally diverse Los Angeles Unified School District, it's the first day of school and a peek inside a classroom reveals a teacher introducing her students to creative thinking. "What's three plus seven?" she asks. "Ten!" they shout. "Can you prove that?" she challenges. Students scramble to the board to illustrate their answer. "Good. There's only one answer to that question, but often questions have many possible answers. Those require creative thinking." She explains that in creative thinking as long as the answer fits the question, all answers are accepted and respected, no matter how wild and crazy they may seem! Although skeptical (after all, these students are accustomed to answers being right or wrong) they are curious about this new concept. The teacher holds up an ordinary spring clothespin, asking them to name its uses. As the students begin passing the clothespin around the room, the first answers are quick and obvious. "Use it to hang up clothes." "Use it to keep a potato chip bag closed." "Use it to hold papers together." With the most apparent uses named, responses now come more slowly. One girl notices a small hole near the end. "I could put it on a string, decorate it and wear it as a necklace," she says with pride. Once again, the ideas begin to flow as others jump in with ideas. The clothespin continues around the room until 30 new uses have been discovered, with students still furiously waving their hands with yet more answers.



Authors Judy Woodward (l.) and Selma Wright, INVENT AMERICA! Educators of the Year, with computers donated by IBM.

HELPING KIDS BECOME CREATIVE THINKERS

Thus another year of the INVENT AMERICA! program has begun, with exercises and activities designed to stimulate creative thinking and problem-solving skills. There is much work ahead to help students develop fluency in creative thinking and problem solving. Classroom activities and lesson plans are implemented, many of them taken right from the INVENT AMERICA! program handbook, others designed and developed by teachers themselves. Some plans, such as the clothespin exercise, are simple, oral questions. Some require drawings—what would an underwater city look like? Some call for homework—what can you make using only a paper plate and string? Each lesson is designed to test and challenge typical ways of thinking.

As the school year progresses, it's clear the kids have caught on and love this new approach to learning. Their responses are getting faster and more fluent as they gradually realize they can approach problem solving in many ways. They are learning to become "risk-takers," willing and eager to express ideas in this heightened atmosphere of



How do you get a farm in a bucket?



How do you get a one-eyed, turbo-charged Snorkasaurus in a bucket?

encouragement and acceptance. Teachers, meanwhile, are quick to observe that the INVENT AMERICA! program is energizing their students and helping them raise self-esteem. Especially exciting is the fact that students at all grade levels and in all classes, from Gifted to Special Education, are benefiting from this unique learning approach.

PUTTING SKILLS TO THE TEST—BY INVENTING

Soon it's time to put their creative thinking skills to the test, and students are introduced to the concept of inventing. Pictures of famous inventors appear on bulletin boards and social studies classes become creative thinking exercises, with children imagining historical development with and without certain inventions. They learn how ideas and inventions shape our history and keep our country strong economically.

The first assignment is for students to look about them and find a problem to solve. They are encouraged to survey friends and families to identify everyday problems that might be solved by an invention. They report back to class with lists of problems, and after much deliberation, each student selects the problem they would most like to solve. A journal is started, with students documenting their ideas as they go along, refining and evaluating possible solutions, until they have what appears to be a workable idea. As the inventions take shape, students realize they need to do more research and parents are quickly involved with trips to the library to learn more about inventions and research as the ideas develop. Students survey local stores and call or write manufacturers, making sure their ideas really are new and not already on the market, or it's back to the drawing board, perhaps to attempt an improvement on that existing idea, or to find a different problem to solve. Along the way they are busy writing about their research in their inventor's logs, drawing sketches, making notes, taking photos of the works in progress. Each day brings new reports of exciting successes and frustrating failures, and offers of help and encouragement from classmates. As the deadline draws near, INVENT AMERICA! fever continues to mount.

EVERY CHILD IS A WINNER

At last, inventions are done and the day of the INVENT AMERICA! fair has arrived. Anticipation and excitement are high as ungainly boxes and strange looking devices are carried onto school buses and parents take time off work to deliver larger and heavier projects. With inventions, and posters explaining each invention, the fair opens to the community where proud parents, teachers, civic and business leaders, and local press are drawn like magnets to the unique displays. They all express their amazement at the clever inventions but the students are too busy talking to the judges to notice. It will be the judges' difficult task to select one student from each grade to represent the school in the national INVENT AMERICA! contest. More importantly, though, is that every child is already a winner. Each has used his or her own creativity to make an invention and has won by starting to develop lifelong learning skills that will carry them forward no matter what occupation they chose. And to each teacher present, that's the real reward.

Finally, the selections have been made, and the winners announced. There are cheers and flash bulbs popping as the local reporters rush forward to interview the budding young Edisons. Surveying her students' accomplishments, the teacher is exhilarated by the successful conclusion of the year's INVENT AMERICA! program. There's not much time to savor it however, for already she is surrounded by students begging, "Can we do INVENT AMERICA! again next year? *I have the best idea. . .*"

Note: Los Angeles United School District is now providing its teachers continuing credits through the INVENT AMERICA! program.

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KIDS ATTACK TODAY'S ISSUES ...BY INVENTING

What are kids concerned about these days? American children are troubled by the same problems that plague adults—the environment, humanitarian issues, and of course, household convenience and safety.

Through the INVENT AMERICA! program, students in grades kindergarten through eight are confronting these problems with sensitivity and creativity and inventing solutions which will affect the future of America.

To applaud their efforts, several INVENT AMERICA! corporate sponsors have established added incentives through special award categories.



K mart's Environmental Award winner Jennifer Shelburne accepting her award from K mart Executive Vice President Dick Miller.

Annually, K mart awards the best environmental invention in its continual efforts to encourage kids to become more environmentally aware. The 1991 K mart INVENT AMERICA! Environmental Award was presented to Jennifer Shelburne, a 7th grader from Bardstown, Kentucky, for her "Cardboard Filler Machine," which creates cardboard packaging fillers. "Styrofoam is very harmful," she says, "It has chemicals in it that harm the ozone, it is not recyclable, nor is it biodegradable." In presenting the award, Richard S. Miller, K mart executive vice president, said, "As a company, we are committed to a healthier environment for America and we feel it's important to encourage today's youth to be aware of important issues. As a special tribute, Jennifer and her teacher, Mary Lauer, will ride on the K mart INVENT AMERICA! float in the 1992 Rose Bowl Parade.



Polaroid Special Needs Award winner Marissa Mackowiak with her "Sound Awareness Device" invention.

The Polaroid Corporation, long-devoted to helping individuals with "special needs," recognized Marissa Mackowiak, a 5th grader from Sterling Heights, Michigan, for her "Sound Awareness Device," a large wrist watch with sound sensors. It's designed to pick up particular sounds, enabling hearing impaired individuals to "hear" door bells, telephones, alarm clocks and conversations out of their audio reach by feeling a gentle vibration.

Polaroid Divisional Vice President Brian O'Connor cites the invention as "an example of how young inventors are learning to identify problems, recognize needs and come up with creative solutions."



Clayton Deutsch, John Darrall Humanitarian Award winner, with his "Safe Plane" invention.

The 1991 John Darrall INVENT AMERICA! Humanitarian Award was presented by Pepsi-Cola Vice President Barbara Burek, in memory of Darrall, who started Pepsi-Cola's initial sponsorship of INVENT AMERICA! It was awarded to Clayton Deutsch, a 4th grader from Sewickley, Pennsylvania, for his "Safe Plane." Saddened by a friend's death in an airplane crash, Clayton "redesigned the plane and moved things around so that it is safer." His plans include an emergency exit in the cockpit; fire-retardant cabinets and blankets; infant seats; and an extra half foot in the center aisle.

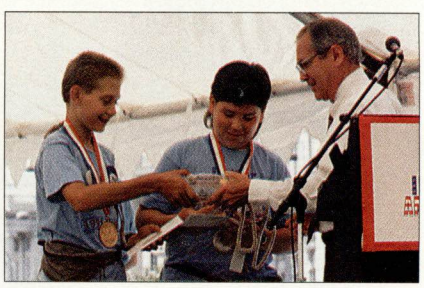
Kids are also busy creating innovative and thoughtful household inventions. In response to the growing number of these inventions, Good Housekeeping awarded Ryan J. Nolan, a 6th grader from Piscataway, New Jersey, the INVENT AMERICA! Good Housekeeping Best Invention for the Home Award for his "Remarkable Rinkle Remover" invention.

Ryan's invention allows a whole closet of clothing to become wrinkle free at once via pipes connected to a hot water heater that runs under the floor of the closet and produces steam that escapes through holes in the floor. "Good Housekeeping applauds the efforts of children who use creative insight and practical solutions to recognize and address the challenges of household safety and convenience," Good Housekeeping Publisher Alan Waxenberg says.



Good Housekeeping's Best Invention for the Home Award winner Ryan Nolan with Good Housekeeping Publisher Alan Waxenberg (3rd from l.), teacher Anne Carey (far right), and proud family members.

And finally, kids also learn by complicating, rather than simplifying a seemingly easy task! Receiving this year's 3M INVENT AMERICA! Rube Goldberg Award were Nathan Frederickson and Andrew Bell, 5th graders from Elkhart, Indiana. Nothing can compare to the elaborate system they devised to enable couch potatoes to pour a glass of Pepsi without getting up! Frank Sando, 3M National Accounts Manager, reminded kids *and* adults the innovation and creativity these kids demonstrated is critical in our future workforce. In fact, he told Nathan and Andrew they could have *his* job one day—but asked them to wait a few years before applying!



Frank Sando, 3M National Accounts Manager, presents this year's 3M Rube Goldberg Award to Nathan Fredrickson (l.) and Andrew Bell (r.)



Kmart SM

Salutes
INVENT AMERICA!™

In keeping with our commitment to improve education and the environment, Kmart proudly sponsors the INVENT AMERICA!™ Environmental Award. This year's winner is Jennifer Shelburne, a 7th grader from Bardstown, KY. Jennifer's invention, a cardboard filler machine, provides a creative alternative for packing material. Look for Jennifer and her teacher, Mary Lauer, on the Kmart/INVENT AMERICA!™ float in the Tournament Of Roses Parade.

INVENT AMERICA!™ was developed by the nonprofit US Patent Model Foundation. For a free INVENT AMERICA!™ starter kit write: INVENT AMERICA!™, 510 King Street, Suite 420, Alexandria, VA 22314. Include $2.95 for postage/handling
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ADVERTISEMENT

Quaker Oat Life®

presents

"Mom, Do I Have to Eat This?"

Ways to Get Your Kids to Eat Nutritiously (Without Them Even Knowing It!)

CONTEST

Any mom knows that getting kids to eat what's good for them can be a challenging feat—but certainly not impossible. Moms have been using their smarts to get kids to adopt healthy eating habits for years.

Like the time you got your children to eat raw carrots and celery by making their favorite dip to eat with it? Or how about slicing up fresh apples and vegetables for kids to snack on during long car trips? What about a delicious good-for-them snack mix using Quaker Oat Life cereal for the kids to munch on while doing their homework?

ENTER: In 100 words or less describe the most inventive, creative tactic you have used to get your child to *like* and *enjoy* eating nutritiously.

WIN:



ROLLERBLADES!

One mom and kid will get a pair, along with helmets, knee and elbow pads, and wrist guards.

RULES: All entries must be received by December 15, 1991. Not responsible for late, lost, or misdirected mail. Write legibly or type your entry in 100 words or less, on a plain piece of paper. Send along with your full name, address, and daytime telephone number to Good Housekeeping Quaker Oat Life Contest, P.O. Box 1418, Radio City Station, New York, NY 10101-1418.

Entries will be judged on the basis of clarity and originality by a qualified panel selected by Good Housekeeping. Judges' decision is final. Winner will be notified by mail by April 30, 1992. All entries become property of contest sponsors and will not be returned.

Winner will receive the following prize: Two sets of rollerblades, two helmets, two sets of knee pads, elbow pads, and wrist bands.

Contest is open to all residents, 18 years or older, of the USA, its territories and APO/FPO addresses except employees and families of Quaker Oats Company and The Hearst Corporation, their affiliates and advertising agencies. Proof of eligibility and compliance may be required. By entering the contest, entrants consent to use their name and likeness without additional compensation for publicity/commercial purposes. Winner assumes all risks associated with acceptance and use of all prizes and holds sponsors harmless against related claims. Subject to all applicable state, federal, and local laws and regulations. Void where prohibited. All federal, state, and local taxes responsibility of winner.

"LITTLE MAN TATE" AND INVENT AMERICA!



When Fred Tate was a year old he could read. At four, he wrote poetry. Today, he paints murals, plays piano at competition level, and solves dazzlingly intricate mathematical equations. Fred Tate is now seven years old.

"Little Man Tate" is the story of this extraordinarily gifted boy and his attempts to fit in. The film marks the directing debut of Oscar-winning actress Jodie Foster. This touching story is one Ms. Foster closely relates to "not in an autobiographical way, but in terms of things I feel deeply and believe in."

While Fred Tate is an adult intellectually, he depends on his mother, warmly portrayed by Foster, as any child would, for emotional support and guidance. He also needs his teacher/psychologist, played by Academy Award winner Dianne Wiest, for things his mother can't give him and exposure to a wealth of knowledge beyond her experience

Ms. Foster and Orion films, upon learning about INVENT AMERICA! and how it speaks to the creativity and uniqueness of each child, were very eager to participate. They agreed to hold a special premiere of "Little Man Tate" as a benefit for INVENT AMERICA!.

Ms. Foster also makes a personal appearance and provides a brief clip from "Little Man Tate" during this year's INVENT AMERICA! Think Link, a satellite-fed training program provided at no cost to 50,000 teachers linked simultaneously in 2,400 communities.

After seeing a preview of "Little Man Tate," INVENT AMERICA! Chairman J. Morgan Greene said, "This film will capture the heart of anyone who has ever seen a child struggle with their need to fit in. It will help kids develop a tolerance for each other." He also commented, "We're delighted that Ms. Foster and Orion films have chosen INVENT AMERICA! to support through this exceptional film."

FIRST WOMAN IN THE NATIONAL INVENTOR'S HALL OF FAME

So much can be learned from a woman, born in 1918, who overcame the hardships of The Depression, the barriers encountered by women in medical research, and the handicap of not having a Ph.D. Last May, Gertrude Belle Elion was the first woman to be inducted into the National Inventor's Hall of Fame in Akron, Ohio, joining such noted inventors as Edison and Bell. Her name appears on more than 45 patents and over 280 scientific publications on her drug discoveries.



Gertrude Belle Elion

In 1944, Elion formed a collaboration, lasting over 40 years, with Dr. George H. Hitchings at the Burroughs Wellcome Company. They discovered and developed drugs crucial to the understanding of leukemia, malaria, herpes and the rejection of transplanted organs, and were awarded the Nobel Prize in medicine for their work.

"I attribute much of my success to Dr. Hitchings and the excellent team of men and women who have worked with me over the years," Elion explains. She also pays tribute to the U.S. Patent System. "Patents provide an incentive to creativity and the protection of Patents are the insurance policy which encourage an investment in research."

This landmark induction is a milestone for Elion, and for the women scientists who will follow her. She responds, "The scientific research field is wide-open. Women with advanced degrees have an equal opportunity. . . but, the glass ceiling continues to exists."

"People forget the fun of scientific research. It's an exciting game of detective work and mystery." Elion thinks that young people should realize that inventions don't come easily and "to make the most of what you learn, and if you are fortunate, to have some successes along the way, it makes it even better."

Elion retired in 1983, but continues to do research at Duke University, serves on committees, writes and speaks publicly, and is BUSY! BUSY! BUSY!

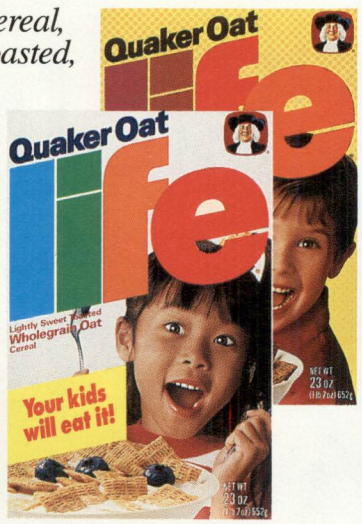
"Why are you eating your Life® cereal so fast?"

"So I'll be ready when I want more."



Quaker Oat Life, the wholesome, wholegrain oat cereal, is also Life the roasted, toasted, lightly sweet, crispy, crunchy cereal your kids will happily, gladly, actually eat. Yay!

Your kids will eat it!



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50¢ OFF ANY Quaker Oat Life®

MANUFACTURER COUPON | EXPIRES MAY 31,1992



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TO MARKET, TO MARKET!

Winning inventions have turned these kids into budding entrepreneurs



The main objective of the INVENT AMERICA! program is to stimulate creativity and develop problem-solving skills in our nation's 31 million school children, but who says it has to stop there? Some kids have actually invented products that are being manufactured and sold.

Casey Golden of Evergreen, Colorado, is becoming an old hand at marketing his invention—he says he's already sold "tens of thousands" of his "Bio-D-Tee," a biodegradable golf tee that "just goes away naturally."



Since creating the biodegradable golf tee by mixing peat moss, fertilizer, grass seed, water, flour and applesauce, the formula has been further refined with the help of two chemists who share the mixture's patent with Casey.

Casey Golden's Bio-D-Tee has golfers teeing off -- naturally!

A 1989 INVENT AMERICA! 5th grade national winner, Casey, who is now 13, says he must rely on his father and brothers to promote his invention because school takes up much of his time. That may no longer be necessary, for during a recent INVENT AMERICA! week event, Casey's special golf tees came to the attention of K mart Executive Vice President, Dick Miller. An avid golfer and advocate of environmentally safe products, Miller tried Casey's Bio-D-Tee's and quickly set the wheels in motion for this new product to be available at K mart stores. For more information on the Bio-D-Tee call 1-303-922-1413.

Casey hasn't stopped looking for ways to use the creative problem solving skills promoted by the INVENT AMERICA! program. Concerned about root rot in plants, he's sharing his golf tee formula with biotechnology company Ciba Giegy in an effort to create a biodegradable plant stake.

It's been a year since we last spoke with 1990 INVENT AMERICA! winner, Larry Villella, an 8th grader from Fargo, North Dakota. Since then he estimates the family-owned, ConServ Products Company, which his invention spawned has sold "a couple thousand" of his C-shaped sprinklers through retail and mail order sales (1-800-EARTH 37) at $7.95 each plus shipping. He created the "Conserve Sprinkler," which sprinkles water over the root system of a tree or shrub and has a built-in water regulator out of concern for the environment. It also eliminates the need to switch the sprinklers from one side of the tree to the other.

Larry Villella is saving water and making sure trees get off to a good start with his Conserve Sprinkler!



Meanwhile, Larry has hired the Fargo Public School Evaluation & Training Center and Friendship, which Larry calls "handicapable" groups, to help manufacture his product.

The best part of his success? Larry says it's going to the post office with his dad to see the finished products being sent off to his customers. Larry isn't purely in search of profit, however. Upon hearing that President Bush has asked Americans to plant 10 billion trees in the next 10 years, he sent one to the White House free of charge!

Another successful entrepreneur has joined the list of INVENT AMERICA! alumni, as 1991 Colorado 2nd grade state winner Jessica Leigh Peach begins selling her "Adjustable Jump Rope." Not only is the expandable rope great for single jumpers or for group games, Jessica has dyed the cloth ropes and fashioned them into belts so "if you are away from home or at school, you just wrap it pretty around your waist—even for boys—and you go play something else or go into school!"



Orders for her Adjustable Jump Rope have Jessica Leigh Peach jumping for joy!

Jessica's idea for her invention came from her many siblings. Every time another child joined in jumping rope they had to get a longer rope, so she created her own.

Jessica and her parents are applying for a patent for the jump rope which is sold for $5.99 each. So far, Jessica has sold more than 100 jump ropes to toy stores and a local orthodontist who gives them to his patients.

Participating in INVENT AMERICA! has inspired Jessica to use her creativity to solve other common problems. We can't give it away, but she's at work inventing a customized tea pot.

DID YOU KNOW?...

The disposable paper cup was invented in 1908 in England by Hugh Moore. Because of a health crusade against the spread of germs from public drinking sippers, he was trying to market a pure drink of water.

The penny drink of water never became popular...BUT the custom-made throw-away cup that HELD the water started a major industry!

Talk To Your Kid About Drinking Before He Gets His First Set Of Wheels.



Surprised to hear you should be talking about drinking to a kid who's mastering a bike rather than a car? Don't be.

At Anheuser-Busch, we believe the sooner parents teach their kids the responsibilities of drinking, the more likely it is the kids will decide not to drink before they're of legal age—and to drink wisely, if they choose to drink, when they become adults.



Family Talk About Drinking

With this in mind, we've developed an educational program called **Family Talk About Drinking.** It features a series of informative guides written in conjunction with prominent authorities on children, family counseling, and alcohol research.

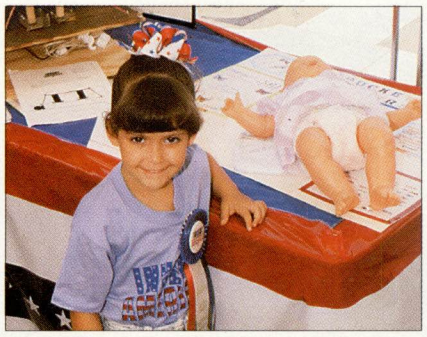
The guides cover everything from the effects of peer pressure and recognizing teenage drinking problems to drinking and driving and the community resources available to you and your kids. It's easy to get the guides. For copies, just call 1-800-359-TALK.

1-800-359-TALK

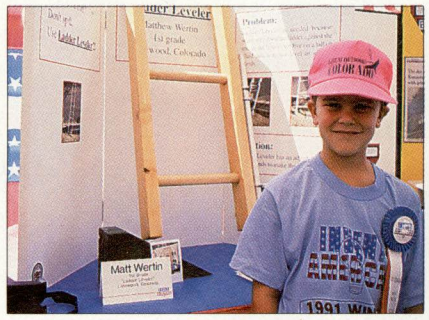
Once you read **Family Talk About Drinking** we're confident you'll see just how helpful the program can be.

Anheuser-Busch, Inc.

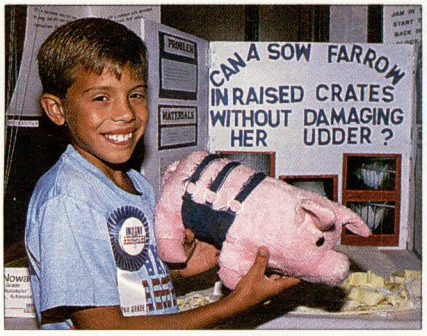
©1990 Anheuser-Busch, Inc. St. Louis, MO



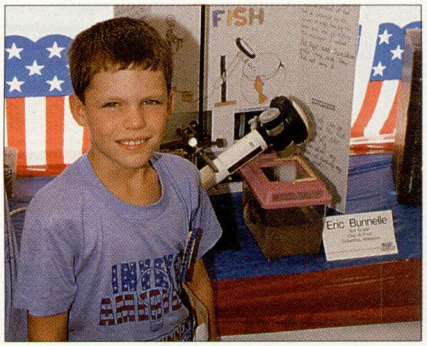
Kindergarten — POCKET DIAPER
A diaper with a built-in powder puff and baby wipes means "the diaper bag won't be messy with all the diaper wipe boxes and powder boxes and stuff."
Chelsea Lanmon, Hamilton, TX



1st grade — LADDER LEVELER
"It's needed because when we raised the ladder against the house it tilted and was not level or safe to climb."
Matt Wertin, Lakewood, CO

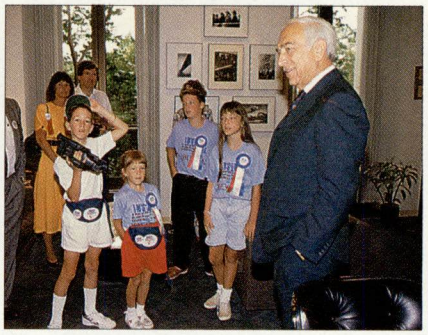


2nd grade — SOW JACKET
This jacket-like invention prevents sows from damaging their udders on the flooring used in raised crates. "When they damage their teats, they won't produce milk and the baby pigs will starve."
Curtis Schroeder, Lost Nation, IA



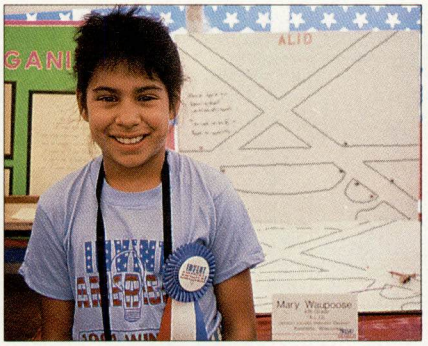
3rd grade — DIAL-A-FISH
"I have a hard time getting people to feed my fish while I am on vacation. I have invented Dial-A-Fish which uses the telephone as a remote control for feeding my fish."
Eric M. Bunnelle, Columbia, MO



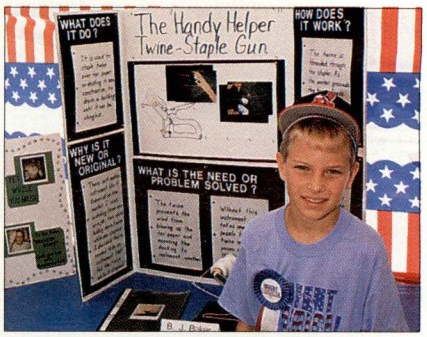


U.S. Senator Frank R. Lautenberg meets with his New Jersey student inventors and their families in Washington, D.C. during national INVENT AMERICA! Week.

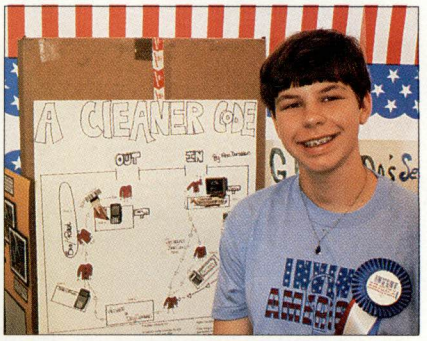
1991 NATIONAL AWARD WINNERS



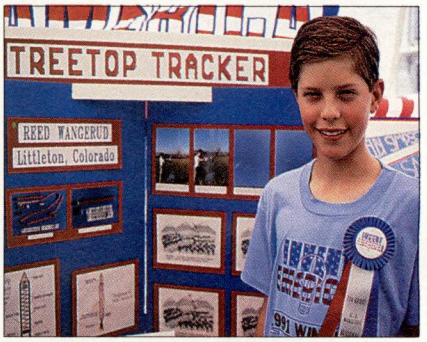
4th grade — AIRPORT LOCATION INDICATOR DEVICE– "Laser beams crossing critical areas of runways and taxi ways will pick up aircrafts' exact location and send it to the ALID board in the control tower."
Mary Kay Waupoose, Keshena, WS



5th grade — THE HANDY HELPER TWINE-STAPLE GUN
While watching workers roofing his dad's apartment, B.J. decided there "needed to be an instrument that fed the twine as it stapled the tar paper." *B.J. Baker, Tahlequah, OK*



6th grade — A CLEANER CODE
"A quicker way to drop off your dry cleaning after hours, because the bar code will tell the dry cleaner everything they need to know."
Ann Dorniden, Eden Prairie,



7th grade — TREETOP TRACKER
To "aid lost hikers by making it easier for aerial searchers to see where a person is located on the ground," this invention uses the principle of model rocketry to fire streamers into the treetops. *Reed Wangerud, Littleton, CO*



8th grade — S.A.F.E. (SEISMICALLY ACTIVATED FRACTURE ELIMINATOR)
This invention "solves the inability of bridges to withstand earthquakes" with a combination of ball-bearings and stretchable bands.
William Cotten, Red Oak, TX


A LEGO® toy never forgets its way back home.
LEGO BASIC stow-away cases make it easy.
Buckets and Tote Packs provide the perfect hide-away for LEGO bricks. LEGO®-TO-GO cases let your little ones carry the fun right along with them. And Brick Vac, the newest of LEGO stow-aways, actually sweeps up bricks and stores them away. What a neat way to have fun!
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Tote Pack
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"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION DOCUMENT NUMBER: 9201194
ORIGINATOR: 02

****

SPEECH: YES NO

FROM: GRIESSBACH, Lothar: REPRESENTATIVE OF GERMAN INDUSTRY AND TRADE

DATE OF EVENT: 04/23/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: SHERATON CARLTON HOTEL

TIME OF EVENT: COCKTAILS 12:00 NOON, LUNCHEON, 12:30 P.M.

SUBJECT: AN INVITATION TO A RECEPTION AND LUNCHEON WITH AN ADDRESS BY HEINRICH WEISS, CHAIRMAN OF THE FEDERATION OF GERMAN INDUSTRIES.

****

RSVP: 04/16/92

CONTACT PERSON:

CONTACT NUMBER: 202-347-0247

****

INVITATION ACCEPTED? ~~XES~~ NO

****

COPIES TO:

REMARKS: 4/14/92 Regretted to Karina. mn

DATE OF LETTER: 04/06/92 DATE RECEIVED: 04/08/92

FILE: P-INVITATION

The Representative of German Industry and Trade
Lothar Griessbach

cordially invites

The Hon. O. Allan Bromley

to a Reception and Luncheon

Address: Heinrich Weiss
Chairman, Federation of German Industries, BDI

"The German-American Relationship —
Opportunities and Limits"

Thursday, April 23, 1992

Cocktails: 12:00 noon
Luncheon: 12:30 p.m.

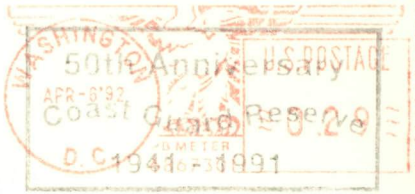
The Sheraton Carlton Hotel
16th & K Street, N.W.
Washington, D.C.

Crystal Ballroom

R.S.V.P. (by April 15)
Telephone 202/347-0247

Invitation not transferrable





The Honorable
D. Allan Bromley
Assistant to the President for Science and Technology
OEOB
17th & Pennsylvania, NW, Room 358
Washington, D.C. 20500

Representative of German Industry and Trade
One Farragut Square South, N.W.
Washington, D.C. 20006

MAIL ROOM
OSIA
RECEIVED

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION DOCUMENT NUMBER: 9201311
ORIGINATOR: 02

****

SPEECH: YES NO

FROM: KUHN, Thomas R.: EDISON ELECTRIC INSTITUTE

DATE OF EVENT: 04/27/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: RFK STADIUM

TIME OF EVENT: 8:00 A.M.-1:30 P.M., 3:00 P.M.-6:00 P.M.

SUBJECT: AN INVITATION TO TEST DRIVE ELECTRIC VEHICLES.

****

RSVP: 04/20/92

CONTACT PERSON: McKENZIE, Jan

CONTACT NUMBER: 202-508-5470

****

INVITATION ACCEPTED? YES NO

****

COPIES TO: PHYSICAL SCIENCES

REMARKS: 4/17/92 - Regretted to Jan McKenzie. mn

DATE OF LETTER: 04/06/92 DATE RECEIVED: 04/09/92

FILE: P-INVITATION

701 Pennsylvania Avenue, N.W.
Washington D.C. 20004-2696
Telephone 202-508-5555

1311

RECEIVED
92 APR 9 P12:57
OSTP
MAIL ROOM

EEI EDISON ELECTRIC INSTITUTE

THOMAS R. KUHN
President

April 6, 1992

Allan D. Bromley, Ph.D.
The Assistant to the President for
Science & Technology
OEOB/17th Street & Pennsylvania Ave., N.W.
Washington, D.C. 20506

Dear Dr. Bromley:

On Monday, April 27, the Edison Electric Institute (EEI) is sponsoring an electric vehicle "ride and drive". I would like to take this opportunity to invite you to join us to take a test drive in this environmentally important "new" transportation technology.

General Motors (GM) has graciously donated the use of an electric-powered Geo Storm for the day. The Geo Storm is one of the cars being used to test components for the new electric vehicle that GM plans to produce in the mid 1990s. Representatives from GM and the Electric Transportation Coalition will be on hand to answer questions about electric vehicle development.

National energy strategy legislation pending before Congress contains provisions for electric vehicles, and we would like to give you the opportunity to learn more about electric vehicles and efforts to promote this important technology.

The ride and drive will be held at the RFK stadium parking lot from 8:00 a.m. to 1:30 p.m. and from 3:00 p.m. until 6:00 p.m. EEI will provide our electrically powered minivan to shuttle you to and from the event, should you desire transportation. If you would like to participate, please contact Jan McKenzie at 202/508-5470 to schedule a time for your ride and/or drive.

Sincerely,

Thomas R. Kuhn

TRK:jmc

701 Pennsylvania Avenue, N.W.
Washington D.C. 20004-2696
Telephone 202-508-5555

1311

RECEIVED
92 APR 9 P12:57
OSTP
MAIL ROOM



EDISON ELECTRIC INSTITUTE

THOMAS R. KUHN
President

April 6, 1992

Allan D. Bromley, Ph.D.
The Assistant to the President for
Science & Technology
OEOB/17th Street & Pennsylvania Ave., N.W.
Washington, D.C. 20506

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Sincerely,

Thomas R. Kuhn

TRK:jmc

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION DOCUMENT NUMBER: 9201192

ORIGINATOR: 02

****

SPEECH: YES NO

FROM: SACMA

DATE OF EVENT: 05/05/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: CRYSTAL GATEWAY MARRIOTT

TIME OF EVENT: 6:00 P.M.-7:30 P.M.

SUBJECT: AN INVITATION TO ATTEND A SPECIAL RECEPTION HOSTED BY SACMA TO SALUTE CHAMPIONS OF THE "MATERIALS REVOLUTION".

****

RSVP: 04/23/92

CONTACT PERSON:

CONTACT NUMBER:

****

INVITATION ACCEPTED? YES NO

****

COPIES TO: PHYSICAL SCIENCES

REMARKS: 4/10/92 Regretted to Ellen. MR

DATE OF LETTER: 04/06/92 DATE RECEIVED: 04/08/92

FILE: P-INVITATION

SACMA
Suppliers of Advanced Composite Materials Association

... Our Members Are Material

You are cordially invited to attend a special reception hosted by the Suppliers of Advanced Composite Materials Association (SACMA) to salute champions of the "materials revolution" in our nation's Capitol.

Time:	*6:00 p.m. - 7:30 p.m.*
	Tuesday, May 5, 1992
Location:	*Salon H*
	Crystal Gateway Marriott
	Arlington, Virginia

SACMA's Board of Directors, Members and Staff look forward to your attendance.

Please R.S.V.P. by April 28, 1992
Contact Gigi Healy, SACMA, (703) 841-1556





Dr. Allan D. Bromley
Science Advisor to the President
Office of Science & Technology
Policy
Old Executive Office Building
17th Street & Pennsylvania Ave. NW
Washington, DC 20506

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SACMA
Suppliers of Advanced
Composite Materials
Association

1600 Wilson Blvd. Suite 1008 Arlington, VA 22209 703-841-1556

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MARINE BIOLOGICAL LABORATORY
WOODS HOLE, MASSACHUSETTS 02543

OFFICE OF THE PRESIDENT



April 2, 1992

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Executive Office of the President
The White House
Washington, DC 20500

Dear Allan:

Seeing my name associated with this letterhead after a lapse of many years may come as a surprise to you. Now that I have passed my 70th birthday my responsibilities at Johns Hopkins are being gradually reduced, allowing me time to devote to the MBL, that grand institution which Lewis Thomas described as "a national laboratory without being supported as such". The Director, Harlyn Halvorson, is retiring this year and while the Laboratory is seeking a successor, I am lending a hand as President.

It is in that capacity that I write today, with the concurrence of Dr. Halvorson and the Chairman of the Board, Dr. Sheldon Segal, to invite you to play a key role in the official opening of the Laboratory's new Marine Resources Center in Woods Hole on Saturday, June 20. It will be a very special occasion coming as it does during a meeting of the Laboratory's Trustees.

It is our fond hope that you would be able to arrive in Woods Hole by 10:00 or 10:30 am. (better still the preceding evening) to participate in the opening ceremonies and specifically to address the Trustees and distinguished guests following a luncheon.

The Marine Resources Center is the realization of a dream cherished by several of Harlyn Halvorson's predecessors including myself. It is a state of the art facility

designed to support advanced research and teaching on the genetics of marine organisms, marine biotechnology, along with a rapidly increasing emphasis on biomaterials.

I do hope you will be able to join us. I can be reached most easily by fax either in Baltimore (410) 516-8537 or Woods Hole (508) 457-1924.

With every good wish.

Yours sincerely,

James D. Ebert

P.S. I'm sorry that Alma's illness caused me to miss Dick Celeste's first meeting as Chairman of the GUIRR. I expect that his energy and vision will revitalize the Council, especially if he can achieve better participation from the industrial side.

cc: Dr. Harlyn Halvorson
Office of the Director, MBL

Dr. Sheldon Segal
Office of the Chairman, MBL

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH DOCUMENT NUMBER: 9201318
ORIGINATOR: 02

****

SPEECH: YES NO

FROM: HELLEM, Steven B.: USACA

DATE OF EVENT: 05/20/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT:

TIME OF EVENT: 9:25 A.M.-9:40 A.M.

SUBJECT: AN INVITATION TO BE A SPEAKER AT THEIR SPRING CONFERENCE.

****

RSVP: 04/28/92

CONTACT PERSON: ABBOUD, Jeff

CONTACT NUMBER: 202-638-1200

****

INVITATION ACCEPTED? ~~YES~~ NO

****

COPIES TO: PHYSICAL SCIENCES

REMARKS: 4/17/92 Regretted to Katlan.
MN

DATE OF LETTER: 04/03/92 DATE RECEIVED: 04/14/92

FILE: P-INVITATION

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USACA

UNITED STATES
ADVANCED CERAMICS ASSOCIATION
Suite 300
1440 New York Avenue, NW
Washington, DC 20005
Telephone: 202 63 USACA (638 7222)
or 202 638 1200
Fax: 202 639 8685

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Sundstrand Power Systems Division
Sundstrand Corporation

Textron Specialty Materials
Subsidiary of Textron Inc.

3M Company

Union Carbide Coatings Service Corporation

April 3, 1992

Dr. D. Allan Bromley
Assistant to the President for
Science & Technology
Old Executive Office Building
Washington, DC 20500

Dear Dr. Bromley:

On behalf of the United States Advanced Ceramics Association (USACA), I would like to invite you to be our speaker at our Spring Conference on Wednesday, May 20, 1992.

USACA is a trade association of 27 major manufacturers and users of advanced ceramics utilized in both structural and electronic applications. We are dedicated to identifying and supporting advanced ceramics programs that will speed the commercialization of advanced ceramics and support the domestic advanced ceramics industry.

Enclosed is information regarding USACA and our advanced ceramics development and commercialization program. Please note the wide range of applications for advanced ceramic materials and products.

Dr. Bromley, we hope you will be able to join us at 9:25-9:40 a.m. on May 20. We anticipate your comments to last about 10 minutes with 5 minutes for Q&A. Your contribution to the Advanced Materials and Processing Program is of great interest to the USACA members. Specifically, we would be interested in hearing your thoughts regarding the direction the program will take in the future.

If you would prefer another time slot on the 20th, we will do what is necessary to accommodate your schedule. Should you have any questions, please contact me or Jeff Abboud at 202-638-7222 or 202-638-1200.

Sincerely,

It was good seeing you in Utah.

Steven B. Hellem
Executive Director

(ACA):AC9472ACA

1318

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USACA

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April 3, 1992

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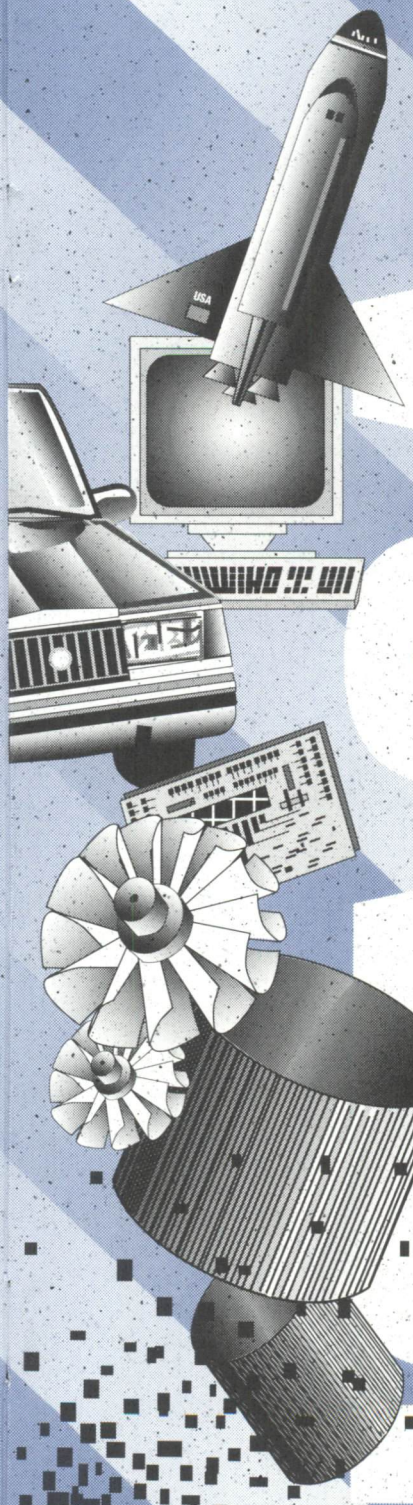
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Sincerely,

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Steven B. Hellem
Executive Director

(ACA):AC9472ACA



USACA

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Washington, DC 20005
Telephone: (202) 63-USACA(638-7222) or (202) 638-1200
Fax: (202) 639-8685

BENEFITS OF MEMBERSHIP

In addition to the opportunities to participate on the Board of Directors, committees and working groups, USACA membership offers these benefits:

- **Market Expansion:** USACA seeks to identify new market opportunities for member companies and eliminate barriers to commercialization of U.S. advanced ceramics.
- **Government Liaison:** USACA serves as a liaison with Congress and regulatory agencies and, where appropriate, advocates legislative positions on behalf of USACA members.
- **Publicity:** USACA disseminates information worldwide on developments in the U.S. advanced ceramics industry.
- **Publications:** Members receive the quarterly USACA Report and the monthly USACA Update, as well as timely reports on legislation and other issues affecting the industry.
- **Annual Meetings:** Members are invited to attend and participate in USACA's spring and fall meetings. The meetings provide an excellent opportunity to interact and develop relationships with other executives involved in the U.S. advanced ceramics industry, as well as congressional leaders, government agency representatives and the media.

WHAT IS USACA?

Formed in 1985, the United States Advanced Ceramics Association (USACA) represents the interests of manufacturers and users of structural, electronic and other functional advanced ceramic products. USACA is dedicated to the advancement and commercialization of the domestic advanced ceramics industry, a rapidly evolving sector with a multi-billion-dollar future.

USACA is a strong and effective voice on issues of concern to the advanced ceramics industry, including the protection of member companies' competitive future and the need for federal vision and long-range funding to support industry innovations.

USACA is:

- The leading voice for the United States' principal manufacturers of structural, electronic and other functional advanced ceramics;
- The key representative of users and producers of advanced ceramics before government agencies, Congress and the general public; and
- A forum for developing and implementing strategic plans to further the commercialization of advanced ceramics.

ADVANCED CERAMICS: SURVIVAL KEY

Advanced ceramics are enabling technologies that are revolutionizing our nation's industries. These materials will be the foundation for a new generation of high-efficiency, high-performance automotive, aerospace, defense and electronic products.

The United States and its foreign competitors have identified advanced ceramics as critical to future employment, national security, gross national product and balance of trade. Many foreign governments are working energetically with their domestic producers to develop and commercialize the technologies. The competitiveness and survival of the U.S. industry also depend on the successful commercialization of advanced ceramics.

However, 10 years or more can be required to bring advanced ceramic products from concept to market. To promote the optimum environment for U.S. industry to meet this challenge, USACA has developed an Advanced Ceramics Development and Commercialization Program.

This initiative, entitled "Bridging the Gap," is designed to help the industry grow through advocacy and coordination of the relevant programs and resources of the federal government. The initiative calls for federal advanced ceramic manufacturing, insertion and procurement programs. It also advocates incentives to encourage greater capital investment by manufacturers and end-user "pull-through," and urges protection of the technology and property rights of advanced ceramics companies taking part in government programs.

USACA ORGANIZATIONAL STRUCTURE

Led by the USACA Board of Directors, which is composed of senior-level managers from member companies, USACA is actively engaged in promoting the interests of the U.S. advanced ceramics industry through the work of four standing committees:

- The Structural Ceramics Committee focuses on research and development programs, technology transfer, manufacturing and processing technology, classification, standardization, and health and safety issues.
- The Electronic Ceramics Committee works to enhance the U.S. electronic ceramic industry's competitive position by promoting market opportunities, government support and technology development.
- The Government Affairs Committee seeks to increase government recognition and support of the advanced ceramics industry and promote the "Bridging the Gap" program.
- The Public Affairs Committee promotes increased public awareness of the advanced ceramics industry.

Committee agendas are carried out by USACA staff and working groups, formed to further develop and implement action plans on significant issues.

MEMBERS

Allied-Signal Aerospace Company
Allison Gas Turbine Division/
General Motors Corporation
Atlantic Research Corporation
AVX Corporation
Babcock & Wilcox
Brush Wellman, Inc.
Carborundum Company
Caterpillar, Inc.
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Textron Specialty Materials/
Subsidiary of Textron Inc.
Union Carbide Coatings Service Corporation



Jeffrey S. Abboud
Director
Government Affairs

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UPDATE

FEBRUARY 1992

PRESIDENTIAL ADVANCED MATERIALS INITIATIVE

On January 29, Dr. D. Allan Bromley, Assistant to the President for Science and Technology Policy, unveiled five national science and technology strategies, as part of the FY 1993 Research and Development budget. The advanced materials and processing portion of the proposed budget calls for a 10 percent increase in funding for advanced materials programsover FY 1992 allocations. The ceramics portion of the materials budget was increased by $18 million or 14 percent and composites received a $24 million or 13 percent increase from FY 1992 to FY 1993.

The administration has also adopted USACA's phrase "bridge the gap" and the accompanying budget summary included this message. The administration's focus on advanced materials presents USACA with a major opportunity to have the programs outlined in USACA's "Bridging the Gap" adopted by Congress.

During the same week Dr. Robert White, Under Secretary of Commerce for Technology, released the Advanced Materials and Processing Progam (AMPP) presidential initiative. The AMPP was developed as a result of the interagency materials budget crosscut carried out by the Federal Coordinating Council for Science, Engineering and Technology (FCCSET). AMPP will focus special attention on the cooperative effort between industry, universities, government and laboratories from Research &Development to commercialization.

DOC HOLDS WORKSHOP ON CRITICAL TECHNOLOGIES

On February 6, 1992, the Department of Commerce (DOC) held a workshop to provide the technology industries with an overview of DOC's Strategic Partnerships Initiative (SPI) and its Critical Technology Assessment. Deborah Wince-Smith, Assistant Secretary for Technology Policy, told the audience about the SPI, a program launched by DOC in response to the challenges posed by foreign competition to American technology leadership. SPI is designed to act as a catalyst for the creation of multi-industry teams composed of noncompeting firms representing manufacturers, suppliers and users for the creation and commercialization of large-scale technologies.

The Bureau of Export Administration hosted a critical technology assessment overview and conducted breakout sessions for members of six critical technologies industries selected for this year's assessments. The technologies, including advanced ceramics and composites, are being assessed as part of an analysis of the condition of the U.S. defense industrial base.

For more information about SPIs and the DOC BXA assessment, contact Jeff Abboud at 202-638-1200.

USACA EXECUTIVE COMMITTEE COMMITTED TO QUALITY MANAGEMENT AND GROWTH

Under the leadership of USACA Chair Maxine Savitz, Allied-Signal Aerospace, the Executive Committee has met twice since the October conference to develop and implement a strategy for quality management and organizational growth for USACA.

As part of this strategy, the Executive Committee will be meeting quarterly to review association membership, activities and finances. Committee chairs will become more involved in budgeting, and new financial reporting procedures have been established to provide detailed reporting on expenditures of USACA resources.

USACA Secretary/Treasurer, Allen Spizzo, Hercules, is working with the Executive Committee to spearhead the organization's strategy for growth. As part of the strategy, a new USACA brochure and other membership materials are being developed, and the Executive Committee will ask the Board to take a more active role in soliciting prospective members.

ELECTRONIC CERAMICS COMMITTEE SETS AGENDA FOR 1992

The Electronic Ceramics Committee met in early December to outline Committee goals for 1992, elect a new chairman and develop a series of objectives and action items.

Carl Eggerding, IBM, was elected Chair of the Committee, replacing Grover Coors, Coors Ceramic Company. Grover Coors has been named Executive Vice President of Adolph Coors Company's Washington Activities and therefore has increased responsibilities for company activities. Carl Eggerding was nominated by Grover to chair the Committee.

One of his first tasks of the year for the Committee will be to oversee publication of a new USACA Electronic Ceramics Directory, scheduled for completion in the first quarter of this year.

The directory will be used to promote the identity and awareness of the U.S. electronic ceramics industry among key government officials and users of electronic ceramic components and products.

The Committee agreed that USACA could best serve the U.S. electronic ceramics industry by working togain foresight on how electronic packages will be developed in the future; helping to correct the misperception that the industry does not exist in the Unied State; and assuring users that the U.S. industry is stable and can meet their needs.

Over the next year, the Committee will develop a series of education, communication and advocacy programs to help meet these challenges. The Committee will also develop benchmarks for success to chart its progress.

For more information on the Electronic Ceramics Directory or on Committee activities, please contact Lisa Franklin at USACA, (202) 638-1200.

CONGRESSIONAL BRIEFING

USACA will hold a Congressional Breakfast Briefing on the morning of March 17 on Capitol Hill. This is an excellent opportunity to provide members of Congress and their staffs with an overview of USACA and the federal advanced ceramic programs supported by USACA.

USACA members are encouraged to take advantage of the opportunity to display products along with company name, logo and explanatory information. Tables (4' x 8') will be provided as well as additional space for larger displays.

DOE REQUESTS $6.9 MILLION FOR PROGRAM IN FY 1993

The Department of Energy (DOE) has requested an FY 1993 funding level of $6.9 million for the Continuous Fiber Ceramic Composites (CFCC) program. This would mean a 3 percent increase in funds for the program over FY 1992 figures. The USACA Ceramic Composites Working Group, chaired by Bill Long of Babcock & Wilcox, will be working to develop a strategy to ensure continued financial support for the program as it makes its way through the appropriations process on Capitol Hill.

For more information, contact Jeff Abboud at USACA offices.

NEW MEMBERS

USACA is pleased to welcome new members from LTV Aerospace, Atlantic Research Corporation and ICI Advanced Ceramics. The representatives from the companies are Doug Freitag, Senior Staff Engineer, LTV Aerospace; Shellie Simler, Manager of Business Development, Atlantic Research Corporation; and Charles Brown, Vice President of New Business Development for ICI Advanced Ceramics.

UPCOMING EVENTS

USACA Congressional Briefing
March 17, 1992
Washington, DC Location TBA

USACA Spring Conference
May 19-21, 1992
Ritz-Carlton Pentagon City

USACA Fall Conference
October 13-15, 1992
Location TBA

New Technology Week
Spring Conference
March 12-13, 1992
San Francisco, CA
Call 202-638-4260

American Ceramic Society
1992 Annual Meeting
April 12-16, 1992
Minneapolis, MN

USACA

UPDATE

SPECIAL EDITION

UNITED STATES
ADVANCED CERAMICS ASSOCIATION
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Washington, DC 20005
Telephone 202 638-1200
Fax: 202 639-8685

On March 24, 1992, Joseph Coors, Jr., President of the Coors Ceramics Company and President of USACA, delivered the following keynote address before the National Technology Initiative Conference in Orlando, Florida.

I am pleased to be here today to support what I believe to be an important effort of the Administration to move our country forward on a number of technology fronts. These new, challenging fronts are in many ways similar to the Cold War fronts faced by policymakers and businessmen for the past 50 years. I believe this Administration, Congress and the business community have one of the greatest opportunities in the history of our nation to begin moving in new directions, with new technologies that will keep America preeminent in worldwide competitive markets and will provide American products around the world.

I want to commend President Bush and his technology team that includes Secretary Watkins, Secretary Card, Administrator Truly and very importantly Dr. Bromley, the president's science advisor as well as Secretary Franklin of the Department of Commerce, who was just sworn in yesterday. These leaders along with their professional support staffs are setting the course that will lead our nation in the post-Cold War battle for international industrial preeminence that we can see evolving today. They have recognized the challenge and are asking the right questions, which is "How can we in business, academics and government identify effective ways to translate new technologies into competitive goods and services?" It is now our responsibility to provide them and other key policymakers with our answers.

In the '90s and into the next century, the United States faces a great challenge, as great as the one we took on after World War II, when we rebuilt the West and at the same time defended it against the strategy of aggression implemented by the communist block.

Our country stood steadfast for decades, dedicating immense resources to the building of a defensive shield that kept the West free from our common enemies. Our Nation stood proud as the fruits of our labor allowed all of the allies to grow strong and prosperous economies. Finally, after years of struggle, we saw the melting of the iron curtain and the demise of a great enemy.

The United States has proven to the world that our form of government and our free economic system are superior to the system so long embraced by our defeated enemy. This does not mean we can now rest on our accomplishments. We must face new challenges that have developed. The challenge comes not from our enemies, but from our friends.

We are now entering into a new competition. Fortunately, we have a home-field advantage - the game we are playing is the game we know best. Capitalism. Researching and developing technologies, designing and manufacturing products, and creating markets, jobs and wealth.

You have all seen the reports circulated in Washington by the private sector Council on Competitiveness and the Aerospace Industries Association, as well as the reports by the National Critical Technologies Panel and the Departments of Defense and Commerce, which have identified technologies critical to the nation's economic prosperity and security. The reports identify technologies in the areas of manufacturing, information and communications, biotechnology and life sciences, aeronautics and surface transportation, and energy and the environment. In addition, they identify an area which I feel may be the most critical because it is an enabling technology which impacts almost every one of the above categories.

As you may or may not know, I serve not only as chairman and CEO of the Coors Ceramics Company, but also as president of the United States Advanced

Ceramics Association (USACA). USACA represents 27 major U.S. manufacturers and users of advanced ceramic structural and electronic products. It is the leading voice for the U.S. industry and a key representative of advanced ceramic users and producers before Congress, federal agencies and the public. USACA is dedicated to the domestic commercialization of advanced ceramic products and components.

Advanced ceramic technologies will have a major impact on several sectors of the economy, including military/aerospace, surface transportation, electronics and manufacturing. Some of the specific advanced ceramic applications include advanced subsonic and supersonic aircraft turbine engines; high-performance, fuel-efficient automobile turbine engines and engine components; integrated circuit and semiconductor packaging; integrated optic circuits and sensors; heat exchangers, cutting tools and wear parts for manufacturing.

Several years ago, USACA's member companies recognized that our foreign competitors have targeted advanced ceramics as a key to industrial competitiveness in the 21st century and are aggressively developing the technology. Therefore, USACA's mission has been to work for the development of a strong and viable domestic advanced ceramics and materials industry. This is essential to the future of the nation's employment, security, gross national product and balance of trade.

From its inception, USACA has encouraged the development of federal programs to help industry take advanced materials technology from the research stage to the marketplace. To assist policymakers in this process, USACA developed a six-point "Advanced Ceramics Development and Commercialization Program," better known as the "Bridging the Gap" initiative. It provides policymakers with a guide to programs which would help ensure a strong U.S. materials industry into the next century. The initiative provides a blueprint for the types of advanced materials R&D, product evaluation and demonstration, product insertion, and public and private sector purchase incentive programs that USACA supports.

I want to commend the Administration for its ever increasing emphasis on the development of advanced materials technologies and the development of the Advanced Materials and Processing Program (AMPP) unveiled earlier this year. This is the type of umbrella program needed to assist the government in defining and coordinating materials technology.

The United States has recognized the need to face the challenge posed by our competitors. But, while materials are making the lists, USACA believes the federal government needs to take the next step to work with industry on a more comprehensive initiative to ensure clear U.S. leadership in the commercial materials market.

Throughout the AMPP report and the accompanying releases, the Administration has incorporated the USACA message about "Bridging the Gap" between the laboratory and the market. We hope this greater governmental awareness will continue to strengthen the nation's commitment to this industry and will lead to the adoption of the programs outlined in the "Bridging the Gap" report.

Industry realizes the federal government plays a vital part in the future competitiveness of America's advanced materials industry. Corporate America does look at its government to see if there is the type of long-term commitment that will encourage industry to put more of its own funds into new technologies. And, although our government has begun to prime the pump on this risky, long-term investment, our foreign competitors and their governments are aggressively funding new programs.

The United States government and U.S. industry both need to do more if our country is to be the seller, and not the buyer, of products created by these enabling technologies.

I spoke earlier about the vast resources our nation dedicated to the Cold War. Those resources were well invested. Our investment resulted in the development of a technological base far superior to that of any other nation or community of nations. We must not let this advantage slip away.

As the defense industry faces an uncertain future, it will become increasingly risky for DoD to rely on foreign manufacturers that will be finding military markets less and less attractive. When critical technology is involved, DoD cannot afford to be dictated to by commercial market forces controlled from abroad.

Ceramic packaging technology is an example of where I must raise the flag of concern. This technology is entirely too vital to maintaining our nation's continued lead in sophisticated weaponry to be entrusted completely to any nation beyond our own sovereign policy reach.

Despite industry failures in the past, ceramic packaging in the United States can and must be supported. The United States can rebound in the nineties from a position of not less than 20 percent domestic market share. With anything less, loss of critical mass will seriously endanger that industry regardless of global competitiveness. The government needs to work with the domestic ceramic packaging industry to ensure that market share is increased to a minimum sustainable level. It is not sound policy for DoD to continue to overlook domestic suppliers when the domestic industry is globally competitive and can be responsive to DoD needs. A fraction of the total DoD packaging requirements can provide the critical mass needed to preserve the domestic industry.

As we have seen, policymakers in Washington are now talking about massive reductions in defense spending. If spending on the weapons that won the Cold War is to be curtailed, we must insist that funding is reinvested in programs that will preserve our military and civilian technology base and assist our domestic industry in focusing on objectives that also include commercializing new products, components and parts that can be sold worldwide.

There are several areas where these technologies funds can be allocated, including advanced materials development and application programs which accelerate the development of technology that industry can adopt and scale up. At the same time, it should be clearly understood that industry is now sharing the cost of a wide range of government supported programs and is willing to continue to cost share these programs in the future.

Advanced ceramics, for example, represent an enabling technology that is having a revolutionary impact on our nation's industries. These materials will provide the basis for the development of so many innovative technologies leading to a new generation of high-efficiency, high-performance products.

One of the areas Secretary Watkins and Assistant Secretary Michael Davis have been instrumental in supporting is research and development programs focused on energy conservation. Advanced ceramics have the potential for utilization in transportation and energy applications, such as automobile and truck engines, gas turbine engines, production of synthetic fuels, cogeneration, and waste-heat recovery and advanced power systems, such as low-heat-rejection diesels and fuel cells. Development of ceramic technology for most of these applications will conserve fuel, reduce pollution, increase productivity, make U.S. products more competitive in the international marketplace, and reduce our dependence on foreign sources of petroleum and strategic materials.

Some of the Department of Energy programs leading the field in technology development are the Advanced Turbine Technologies Application Project (ATTAP) of the Light Duty Engine Development Program, the Ceramic Technology Program (CTP), the Continuous Fiber-Reinforced Ceramic Composite Program (CFCC), and Stationary Gas Turbine with Ceramic Components Project for Cogeneration.

In the area of transportation technology, advanced ceramics offer the automobile engines capable of operating at higher temperatures, thus providing increased efficiency, better fuel economy and reduced emissions. The use of ceramic-based engines and engine components in motor vehicles could significantly improve fuel efficiency and U.S. energy dependence, as well as the country's economic stability.

If the U.S. were to gain a technological and production advantage in advanced ceramic-based engines, domestic automakers would have a competitive advantage in

world motor vehicle markets. According to an Argonne National Laboratory study:

- 164 million ceramic engine parts will be needed in the United States by the year 2000, and 558 million parts by 2010;
- The value of these parts in 1986 dollars will increase from more than $1 billion in 2000 to more than $3.6 billion in 2010;
- If U.S. manufacturers lead in the development of advanced ceramics, the U.S. GNP could expand by $11 billion;
- However, if foreign producers lead, the U.S. GNP could decrease by $26 billion;
- As a consequence, U.S. employment could also expand by 100,000 jobs if the U.S. leads, or decline by 200,000 under foreign leadership.

The DoE-sponsored CTP and ATTAP, as well as other federal government advanced ceramic technology programs, have made rapid and substantial gains toward their goals and have been successful in stimulating increased involvement and investment by U.S. industry. The CTP program, administered by Oak Ridge National Laboratory (ORNL), has also been successful in developing core technologies for ceramics in engines. In order to maintain U.S. competitiveness with the increased R&D efforts of other nations, support for the DoE Transportation Ceramic Technology engine programs must continue to accelerate.

In its "Bridging the Gap" report, USACA identified six policy recommendations we believe can help promote the ultimate commercialization of advanced ceramic components and parts by the U.S. advanced ceramics industry. Point One of "Bridging the Gap" calls for the creation and support of multi-year ceramic demonstration and insertion programs that support the domestic development of advanced ceramic components and parts. Demonstration and insertion programs are critical to shortening the distance between the lab and the market.

Technology developed in DoE's engine programs has provided solid expertise to domestic ceramic component manufacturers and must now be transferred to demonstration programs of ceramic gas turbine engines and other ceramic components in cogeneration equipment, automobiles, trucks and aerospace applications.

This year we have urged the government to consider funding fleet demonstrations, which will represent one of the final steps required to enable the transition of advanced ceramics technology from the laboratory to mass-produced commercial systems. This type of evaluation program, focusing on demonstrating the capabilities and qualities of ceramic engines and engine components, would assist not only the manufacturers of those parts, but also the end users, such as General Motors, Ford Motor Company and Chrysler Motor Corporation.

Procurement policies set by DoD and the General Services Administration (GSA) would give incentives or preference to new products and systems incorporating advanced ceramics. In this kind of program, GSA could purchase cars and trucks with certain amounts of ceramic content, such as valves and cam roller followers. DoD could purchase systems after they are demonstrated to System Project Offices by the current Defense Advanced Research Projects Agency (DARPA) insertion program. The creation of more programs like the DARPA ceramic insertion program in other departments and agencies is also encouraged.

The advanced materials industry will continue to call for support of ceramic demonstration and insertion activities that can have a positive effect on our country's energy conservation objectives. These programs should include initial manufacturing technology development activities so manufacturing costs for the items being demonstrated can be reduced while the technology is positioned for a wide range of business applications. Without such a program, valuable time is lost while U.S. companies are forced to wait until products are fully demonstrated before addressing critical manufacturing technologies which reduce cost.

The industry/government cooperative work led by ORNL in the areas of design and life prediction of ceramics, advanced processing, machining, physical and mechanical property characterization, and testing development of ceramics will provide industry with information critical to U.S. competitiveness in this arena.

I was pleased to be with President Bush and Secretary Watkins during the signing of a Cooperative Research and Development Agreement (CRADA) between ORNL and the Coors Ceramics Company. This is a three-year agreement for research on precision machining of ceramics which will be conducted in ORNL's High Temperature Materials Laboratory (HTML) under a program for producing cost-effective, high-strength ceramic components.

I believe CRADAs and similar programs are solid examples of the way this Administration can help us meet the objectives of this session today. CRADAs are government-sponsored programs to assist American industry in becoming more competitive through access to national laboratories manufacturing and measurement technology. Through the CRADA that my company signed just a few of weeks ago, we will have access to Y-12 machining technology and to working relationships relating to the testing of products and materials at the Oak Ridge National Laboratory.

Our CRADA will address four areas of work, including: 1) large plate manufacturing using Y-12 single point grinding techniques, 2) Work that will center on line gauging techniques that feed directly back into the CNC machines and make adjustments, 3) Work station mathematical modeling of injection molding techniques and 4) Work centering on a concept for beverage valve manufacturing.

The bottom line is that the national laboratories have a tremendous amount of technical wealth available to us. This CRADA presented us with a real opportunity to work with and learn from this national laboratory. It is also good for them because they will be learning more about our leading-edge diamond-grinding technology and other technologies that will help all of us reach our objectives.

Two important questions arise when talking about these CRADAs: 1) who will own the technology? and 2) how will the agreement protect the secrecy of existing technology? Under the legislation that authorized the CRADA, each party owns the technology it brings to the arrangement. Any jointly owned developed technology is owned by the organization that developed the technology and an inexpensive license will be provided to the other partner.

With regard to trade secrets, which has in the past been a real road block with partnership in business, we can now keep our proprietary secrets from ever being published and keep jointly developed technology secret for five years. This is a major breakthrough because in the past all jointly developed work with the government had to be published immediately.

I believe the United States has a tremendous opportunity to lead the world toward a new technology and materials revolution. There can be no question that our country's international competitors are well aware of the role advanced ceramics and materials can play in a global economy. These enabling technologies literally will form the basis for the development of many other technological advances.

It is clear the United States has many committed and competitive advanced ceramic and materials companies with talented leaders and workers. A continuing partnership between industry and the government will help ensure that the United States remains the world's industrial leader and the seller of advanced materials and not the buyer.

I want to thank Secretary Watkins and Secretary Card for the opportunity to be here today to discuss this National Technology Initiative program. We all have a tremendous opportunity if we will work together, use the tools provided and focus on our objectives, which clearly must be to commercialize technologies that will ensure that the United States continues to be the example for the rest of the world.

THE BUSH VISIT



J. Miles Cary/News-Sentinel staff

President Bush talks to Joe Coors Jr., left, president of Coors Ceramics Co. and Dr. Alvin Trivelpiece, director of the Oak Ridge National Laboratory on Wednesday after the two signed an agreement to develop techniques for manufacturing ceramic components.

Bush lauds pact on ceramic study

By Frank Munger
News-Sentinel Oak Ridge bureau

OAK RIDGE — Touting technology as a tool for creating American jobs, President Bush hailed a cooperative research agreement at Oak Ridge National Laboratory and said he hoped similar ones would be repeated at sites around the nation.

Bush spoke briefly Wednesday morning to a cheering audience of lab employees outside ORNL's High Temperature Materials Laboratory, which he termed "a world-class materials testing facility."

The president witnessed the signing of a pact between Martin Marietta Energy Systems, which manages the government's Oak Ridge facilities, and Coors Technical Ceramics Co. The three-year, $3.6 million collaboration will focus on better ways to process advanced ceramics for multiple uses in industry.

"This agreement ... combines in one place the resources of government with the energy and inventiveness of private enterprise, and you're pointing our country toward the next American century," Bush said.

"In the old era, now ending, many of America's best scientists were engaged in winning the Cold War. Well, the new era will free up those priceless talents to concentrate on the technologies of tomorrow, improving productivity and guaranteeing our long-term prosperity. We will transform the arsenal of democracy into the engine of economic growth."

The future of U.S. competitiveness in the world marketplace depends on research and development, Bush said, adding, "I'm talking about something you all know a lot about."

The challenge facing the country, he said, is to put more of "these incredible technologies" to work.

The materials laboratory, one of the most modern structures at ORNL, contains an array of sophisticated analytical equipment that cost tens of millions of dollars. A special area of the building will be set aside for the collaborative work between technical experts from Coors and scientists at the Department of Energy's Oak Ridge facilities — including the Y-12 nuclear weapons plant.

Joseph Coors Jr., president of Coors Technical Ceramics Co., and Dr. Alvin Trivelpiece, director of ORNL, signed the agreement — with Bush standing behind them and flanked by Energy Secretary James Watkins and Education Secretary Lamar Alexander.

Bush said the agreement would create 85 new jobs, but it was unclear exactly where those jobs would be. One Coors official said that figure might include personnel working on the research efforts at ORNL, Coors' Oak Ridge plant and Golden, Colo., where the Adolph Coors Co. is based.

The president said researchers would "attack one of the obstacles to wider use of durable, efficient and lightweight ceramic parts — machining ceramics without destroying their desirable qualities." Those ceramic parts will be "vital" to making longer-lasting and more efficient engines in the future, he said.

"We're in a race with other nations for this multibillion-dollar market, and we will get there first with the best products — thanks to the hard work of people right here ...," Bush said.

Since a bill was passed a couple of years ago easing the way for private companies to take advantage of government research efforts, there have been 675 "public-private agreements," Bush said. The Martin Marietta-Coors agreement is the most recent of 26 signed in Oak Ridge.

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WHAT ARE ADVANCED CERAMICS?

Advanced ceramics represent an enabling technology that is having a revolutionary impact on our nation's industries. These materials will provide the basis for the development of innovative new technologies that will make up a new generation of high-efficiency, high-performance products.

Advanced ceramics include a wide range of inorganic, nonmetallic materials produced by new technologies. They differ from conventional ceramic consumer goods, such as dinnerware, tile and plumbing fixtures, in their greatly improved properties, in the novelty of the processes used to produce them and in their applications.

Monolithic ceramics are produced by compacting and sintering extremely pure, microscopically small particles, which yields properties not achievable with previous techniques, including wear resistance, high temperature strength, chemical resistance, dimensional stability and strength-to-weight ratios three times higher than metals.

Ceramic matrix composites are used to provide organic materials with properties to compete with or out-perform metals at high temperatures. Ceramic matrix composites have many of the desired properties of the monolithic ceramics, but also are tougher, particularly in dynamic applications. Other examples include metal-matrix composites and ceramic coated materials.

The development of structural ceramic materials began in the 1960s and was largely motivated by the possibility of substantially improving the performance of gas turbines by raising their maximum operating temperatures. In the 1970s, several major U.S. Department of Defense (DoD) and Department of Energy (DoE) research initiatives explored and advanced the experimental fabrication and utilization of advanced ceramics in gas turbines.

Similar work continued during the 1980s with a variety of government-sponsored advanced gas turbine programs including: DoE's Advanced Turbine Technologies Applications Program (ATTAP), Ceramic Technology for Advanced Heat Engines program (CTAHE), and the Continuous Fiber Ceramic Composite program (CFCC); DoD's Integrated High Performance Turbine Engine Technology initiative (IHPTET); and the DoD/NASA National Aerospace Plane (NASP).

DoE also sponsors programs for the development of advanced ceramics in energy recovery uses, including ceramic recuperator programs that began in the 1970s. DoE currently has new high pressure heat exchange programs, as well as the CFCC, that will help develop composite design and processing technologies for a variety of industrial applications, including industrial turbines, heat exchangers, pollution abatement and waste recovery. Other advanced ceramic programs at DoE include solid oxide fuel cells (monolithic and tubular), high temperature ceramic filters for highly efficient gas clean-up systems, and high temperature superconductivity.

Current and Future Markets for Advanced Ceramics

- **Aerospace**
  - advanced electronics
  - bearings
  - combustors
  - fuel cells
  - fuel systems and valves
  - high temperature auxiliary power units, low weight components for rotary equipment such as starters
  - seals
  - structures
  - thermal protection systems
  - turbine engine components
- **Automotive**
  - advanced reciprocating engines
  - advanced rotary regenerators
  - catalytic converters
  - drivetrain components
  - electronic substrates
  - fixed boundary recuperators
  - fuel injector components
  - low heat rejection diesels
  - turbines
  - turbocharger rotors
  - valves and valve seats
  - waterpump seals
- **Bioceramics**
  - artificial teeth, bones and joints
  - heart valves
- **Chemical Process Industry**
  - catalysts and igniters
  - mechanical seals
  - nozzles
  - radiant tubes and burners
  - recuperators
  - reformers
  - refractories
  - valve components
- **Defense**
  - armor
  - bearings
  - engine combustor sections
  - gun barrel liners
  - improved armor
  - optics
  - rocket nozzles
  - SDI (optical/heat transfer properties)
  - submarine shaft seals
  - tank power trains
- **Electric Power Generation**
  - bearings
  - ceramic gas turbines
  - cogeneration
  - filters (gas clean-up)
  - fuel cells (solid oxide)
  - high temperature components
  - reactor pump seals
- **Electronics**
  - advanced multilayer integrated packages
  - electro-optic packaging
  - multilayer capacitors
  - optical wave guides
  - pressure and gas sensors
  - semiconductor packages
  - substrates
  - superconductors
- **Environmental**
  - advanced components and systems for environmentally harsh processes
  - filters and scrubbers
  - incinerator liners and after-burners
  - radiant burners and boilers
  - wastewater treatment
- **Metals Processing**
  - boats
  - burners
  - crucibles and ladles
  - cutting tools and dies
  - insulation
  - molten metal filters
  - seeded gel abrasives for metal/ceramic finishing
- **Oil Industry**
  - bearings
  - blast sleeves
  - flow control valves
  - pumps
  - refinery heaters

UNITED STATES ADVANCED CERAMICS ASSOCIATION

BRIDGING THE GAP FROM THE LABORATORY TO THE MARKET

Both the United States and its foreign competitors have identified advanced ceramics as critical to future employment, national security, gross national product and balance of trade. Many foreign governments are aggressively working with their domestic producers to develop and commercialize the technology. Likewise, the competitiveness and survival of the U.S. industry depends on the successful commercialization of these materials.

However, the time required to bring advanced ceramic products from concept to market can be more than 10 years, and the necessary long-term investment can be borne only by the country's strongest companies, many of which are unwilling to take the financial risk. To meet this challenge, USACA has developed a six-point Advanced Development and Commercialization Program, entitled the "Bridging the Gap Initiative."

These points are as follows:

Point One:

Create multi-year federal ceramic components demonstration programs that will support the domestic development, manufacture, purchase and in-use demonstration of advanced ceramic parts over a five-year period. This program should target military and commercial advanced ceramic areas, including automotive, aerospace structural, aerospace propulsion, electronics, machine tools, additional weapons systems, component applications and industrial processing equipment.

Point Two:

Create Defense Production Act Title III advanced ceramics programs. These programs would take the form of purchase commitments (guarantees) to buy ceramic components produced by domestic advanced ceramics manufacturers for incorporation into various military systems.

Point Three:

Create and expand investments in domestic advanced ceramics manufacturing science and technology programs aimed at demonstrating cost-effective production and reproducibility of advanced ceramic components focused upon specific requirements of end-users.

Point Four:

Recognize the capital-intensive nature of the advanced ceramics industry and promote industrialization in this area by allowing a more competitive return on advanced ceramic components purchased through the federal procurement system and by permitting a first-year write-down of those new capital investments made by the advanced ceramics industry during a 10-year period.

Point Five:

Provide tax incentives, such as government-funded rebates, for domestic advanced ceramics end-users who incorporate advanced ceramics components in products during the next decade, so as to provide "pull through" to the U.S. advanced ceramics industry.

Point Six:

Mandate the vesting of technology rights in advanced ceramics to domestic advanced ceramics manufacturing contractors when they participate in R&D, Man-Tech and demonstration on a cost-shared basis, in order to attract and promote the most commercially attractive and innovative technologies in these efforts.

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UNITED STATES ADVANCED CERAMICS ASSOCIATION

TESTIMONY

BEFORE THE

UNITED STATES HOUSE OF REPRESENTATIVES

COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

ENVIRONMENT SUBCOMMITTEE

ON

DEPARTMENT OF ENERGY

ENERGY CONSERVATION AND RENEWABLE ENERGY R&D PROGRAMS

FEBRUARY 25, 1992

PRESENTED BY

STEVEN B. HELLEM

EXECUTIVE DIRECTOR

Mr. Chairman, my name is Steven B. Hellem. I am Executive Director of the United States Advanced Ceramics Association (USACA). On behalf of USACA, I thank you and the members of the subcommittee for the opportunity to testify before you regarding DoE energy conservation and renewable energy research and development programs.

USACA represents 27 major U.S. manufacturers and users of advanced ceramic structural and electronic products. It is the leading voice for the U.S. industry, and a key representative of advanced ceramics users and producers before Congress, federal agencies and the public. USACA is dedicated to the domestic commercialization of advanced ceramic products and components.

USACA is working for the development of a strong and viable domestic advanced ceramics and materials industry, which is essential to the future of the nation's employment, security, gross national product and balance of trade. Our foreign competitors have targeted advanced ceramics as a key to industrial competitiveness and are aggressively developing the technology.

I would like to take the opportunity to commend you, Mr. Chairman, and this subcommittee for continuing to drive public opinion and programs in the area of energy conservation and materials development. Your efforts have provided the industry with the type of long-term commitment that will encourage industry to put more of its own funds into new technologies.

At the same time, I want to commend the Administration for its increased emphasis on the development of critical technologies and the development of the Advanced Materials and Processing Program (AMPP) unveiled earlier this year. This program will assist the government in defining and coordinating materials technology.

From its inception, USACA has encouraged the development of federal programs to help industry take advanced materials technology from the research stage to the marketplace. To assist policymakers in this process, USACA developed a six-point "Advanced Ceramics Development and Commercialization Program," better known as the "Bridging the Gap" initiative. It provides policymakers with a guide to programs which would help ensure a strong U.S. materials industry into the next century. The initiative provides a

blueprint for the types of advanced materials R&D, product evaluation and demonstration, product insertion, and public and private sector purchase incentive programs that USACA supports. I ask the Committee's permission to have the "Bridging the Gap" initiative entered into the record.

Throughout the AMPP report and the accompanying releases, the Administration has incorporated the USACA message about "Bridging the Gap" between the laboratory and the market. We hope this greater governmental awareness of the need to strengthen the nation's commitment to this industry will lead to the adoption of the programs outlined in the "Bridging the Gap" report.

The United States has recognized the need to take on this challenge. In addition to the AMPP, advanced ceramics and materials have been identified as technologies critical to the nation's economic prosperity and security in every major private and public sector key technologies listing composed in the past several years, including the National Critical Technologies Panel Report. But, while materials are making the lists, USACA believes the federal government needs to work with industry on a more comprehensive initiative to ensure clear U.S. leadership in the commercial materials market.

The federal government plays a vital part in the future competitiveness of America's advanced materials industry. Although our government has begun to prime the pump on this risky, long-term investment, our foreign competitors have already targeted this industry, and their governments are aggressively funding new programs. Government and industry both need to do more if our country is to be the seller, and not the buyer, of products created by these enabling technologies.

Congress must increase the overall funding of advanced materials development and application programs. These additional appropriations should be used to fund the creation of new programs and to beef up programs which accelerate the development of technology that industry can adopt and scale up. At the same time, it should be clearly understood that industry is now sharing the cost of a wide range of government supported programs and are willing to continue to cost share these programs in the future.

Advanced ceramics represent an enabling technology that is having a revolutionary impact on our nation's industries.

These materials will provide the basis for the development of innovative new technologies that will lead to a new generation of high-efficiency, high-performance products.

Advanced ceramics have the potential for utilization in transportation and energy applications, such as automobile and truck engines, gas turbine engines, production of synthetic fuels, cogeneration, and waste-heat recovery and advanced power systems, such as low-heat-rejection diesels and fuel cells. Development of ceramic technology for most of these applications will conserve fuel, reduce pollution, increase productivity, make U.S. products more competitive in the international marketplace, and reduce our dependence on foreign sources of petroleum and strategic materials.

There are a number of federal government advanced ceramic research and development programs focused on energy conservation. Some of the types of programs that are leading the field in technology development are the DoE-sponsored Advanced Turbine Technologies Application Project (ATTAP) of the Light Duty Engine Development Program, Ceramic Technology Program (CTP), Continuous Fiber-Reinforced Ceramic Composite Program (CFCC), and Stationary Gas Turbine with Ceramic Components Project of the Cogeneration - Advanced Topping Cycle Program.

In the area of transportation technology, advanced ceramics offer the capability for automobile engines to operate at higher temperatures, thus providing increased efficiency, better fuel economy and reduced emissions. The use of ceramic-based engines and engine components in motor vehicles could significantly improve fuel efficiency and U.S. energy dependence, as well as the country's economic stability.

If the U.S. were to gain a technological and production advantage in advanced ceramic-based engines, domestic automakers would have a competitive advantage in world motor vehicle markets. According to the Argonne National Laboratory study, "Applications of Ceramics to Advanced Heat Engines: An Economic Assessment Based on the Worldwide Delphi Survey," 164 million ceramic engine parts will be needed in the U.S. by the year 2000, and 558 million parts by 2010. The value of these parts in 1986 dollars will increase from more than $1 billion in 2000 to more than $3.6 billion in 2010. If U.S. manufacturers lead in the development of advanced ceramics, the U.S. GNP could expand by $11 billion. However, if foreign producers lead, the

U.S. GNP could decrease by $26 billion. As a consequence, U.S. employment could also expand by 100,000 jobs if the U.S. leads, or decline by 200,000 under foreign leadership.

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The industry/government cooperative work led by ORNL in the areas of design and life prediction of ceramics, advanced processing, machining, physical and mechanical property characterization, and testing development of ceramics will provide industry with information critical to U.S. competitiveness in this arena. USACA was pleased to see President Bush and Secretary Watkins attend the signing ceremony of a Cooperative Research and Development Agreement between ORNL and the Coors Ceramics Company,

represented by Joseph Coors, Jr., USACA's president. This is a three-year agreement for research on precision machining of ceramics which will be conducted in ORNL's High Temperature Materials Laboratory (HTML) under a DoE-CE and DoE-DP cooperative program for producing cost-effective high-strength ceramics components. The cost of the cooperative research is being shared between DoE and Coors.

The HTML is a solid success story. This is a DoE designated-user facility, sponsored by the Office of Transportation Technologies, Conservation and Renewable Energy. The HTML is the most advanced ceramics characterization and testing lab in the world. Specialized research instruments are grouped in six user centers: Materials Analysis, X-Ray Diffraction, Physical Properties, Mechanical Properties, Ceramic Specimen Preparation, and Residual Stress. Hands-on operation of this equipment by qualified industrial and university users is encouraged.

A User Center staff is available with special responsibility for interacting with users and maintaining the User Center equipment. Members of the industrial and university research communities gain access to this extensive array of special research equipment needed to characterize the microstructure and microchemistry of materials and to investigate the effect

of these parameters on the physical and mechanical properties of the materials through the HTML User Program. The HTML User Program was established in 1987.

The DoE Transportation Sector FY 1993 budget of $18MM for the Ceramic Technology Program includes $3MM for a project on advanced manufacturing technology to reduce the cost of ceramics. The requested budget will permit the initiation of one joint project with a ceramic manufacturer and an engine company to manufacture and test advanced automotive ceramics. USACA believes the CTP should be increased to $24MM to provide an additional $6MM (total $9MM) for advanced manufacturing technology for ceramics. This will provide funding for two additional contractor teams to develop low-cost advanced manufacturing technologies. The participation of the three industry teams (instead of one) will enable the program to target several ceramic components and enhance the capability of the domestic ceramics industry to meet the needs for automotive ceramics.

Ceramic composites are identified as critical to the nation's economic prosperity and national security in nearly every recent federal government and industry group

technology report. DoE is fostering the development of this enabling technology through its Continuous Fiber Ceramic Composites (CFCC) program.

The purpose of the CFCC program is to develop the technology for low-cost ceramic composites that are significantly tougher than current materials. CFCCs combine low weight, high-temperature strength, and stability in corrosive environments. The program will help provide significant improvements in the energy efficiency of industrial processes and energy conversion equipment, as well as expand available energy options.

This DoE program is an excellent example of how the federal government can set up an effective cost-shared partnership to assist industry with its R&D needs. The CFCC program is viewed by many as a model teaming arrangement that utilizes the talents of industrial suppliers, end-users, universities, national laboratories, and the federal government together to develop a new class of materials. USACA believes the FY 93 DoE budget request of $6.9MM will ensure the continued success of this venture.

Fuel cells are being developed using advanced ceramics. These would have the capability to efficiently convert energy into electricity and power vehicles with significantly reduced emissions. These cells have multifuel capability, including gasoline, alcohol, natural gas, synthetic gas made from coal or plant matter, and a number of other possibilities. The technology offers the potential for conserving fossil fuels for both electric utility power generation and transportation. USACA recommends $1MM in funding for the development of a program to evaluate the feasibility and performance characteristics of monolithic and other solid-oxide fuel cells for automotive use.

In its "Bridging the Gap" report, USACA identified six policy recommendations we believe can help promote the ultimate commercialization of advanced ceramic components and parts by the U.S. advanced ceramics industry. Point One of "Bridging the Gap" calls for the creation and support of multi-year ceramic demonstration and insertion programs that support the domestic development of advanced ceramic components and parts. Demonstration and insertion programs are critical to shortening the distance between the lab and the market.

The technology developed in the ATTAP and CTP programs has provided solid expertise to domestic ceramic component manufacturers and must now be transferred to demonstration programs of ceramic gas turbine engines and other ceramic components in cogeneration equipment, automobiles, trucks, and aerospace applications.

USACA urges the Committee to support ceramic demonstration and insertion activities that can have a positive effect on our country's energy conservation objectives. These programs should include initial manufacturing technology development activities so that manufacturing costs for the items being demonstrated can be reduced while the technology is being positioned for a wide range of business applications. Without such a program, valuable time can be lost when U.S. companies are forced to wait until products are fully demonstrated before addressing critical manufacturing technologies which reduce cost.

The Stationary Gas Turbine with Ceramic Components program (SGTCC) will provide an ideal test bed for demonstrating low-cost, fuel-efficient ceramic turbine technology. For the demonstration of this technology, the Battelle Institute recommended program funding at $8-10MM/year. The

DoE funding level of $0.9MM (in Advanced Topping Cycle/cogeneration) needs to be increased and USACA recommends an additional $4 MM be added to the FY 93 budget for this purpose.

We urge that FY 1993 funding of $10MM for ceramic demonstration/insertion programs for building, industry, transportation or utility applications, and urge manufacturing technology programs be implemented in conjunction with these efforts. The following advanced ceramic technologies and applications need to be proven and would be good candidates for demonstration and insertion programs:

- Ceramic Components for Piston, Diesel and Turbine Engines for Industrial, Automotive (including trucks) and Aerospace Applications

  This includes engines powered by traditional (gasoline, diesel, etc.) and alternative (alcohol, natural gas and coal-derived) fuels. This program should be open to ceramic materials, structures and components from the combustion to the exhaust regions of the engine. Examples include intake and exhaust valves, other valve train hardware, exhaust-port liners, turbochargers, rotors, turbine rotors, turbine blades, combustors, shrouds and other gas hardware, bearings, filters and heat exchangers.

- Ceramic Turbogenerators

  Demonstrate small 15-25KW ceramic turbogenerators using advanced ceramic materials and electrical power conditioning components. Potential applications include hybrid electric vehicles, auxiliary power units for MAGLEV vehicles, lightweight emergency power generation and small total energy systems using natural gas.

In addition to the $10MM, we urge Congress to consider funding fleet demonstrations, which will represent one of the final steps required to enable the transition of advanced ceramics technology from the laboratory mass-produced commercial systems. This type of evaluation program, focusing on demonstrating the capabilities and qualities of ceramic engines and engine components, would assist not only the manufacturers of those parts, but also the end users, such as General Motors, Ford Motor Company and Chrysler Motor Corporation.

Procurement policies set by the Department of Defense (DoD) and the General Services Administration (GSA) would give incentives or preference to new products and systems incorporating advanced ceramics. In this kind of program, GSA could purchase cars and trucks with certain amounts of ceramic content, such as valves and cam roller followers. DoD could purchase systems after they are demonstrated to System Project Offices by the current Defense Advanced Research Projects Agency (DARPA) insertion program. The creation of more programs like the DARPA ceramic insertion program in other departments and agencies is also encouraged.

Mr. Chairman, the United States has a tremendous opportunity to lead the world toward a new materials revolution. You and your Committee are to be commended for recognizing how advanced ceramics and materials can play a major role in energy conservation and technology innovation.

There can be no question that our country's international competitors are well aware of the role that advanced ceramics and materials can play in a global economy. These enabling technologies literally will form the basis for the development of many other technological advances.

It should also be clear that the United States has many committed and competitive advanced ceramic and materials companies with talented leaders and workers. We emphatically reject the reports that often come from other parts of the world that the United States has lost its ability to compete with regard to advanced ceramic structural and electronic parts and components. At the same time, it must be understood that the competition in our industry is severe because, just like us, the rest of

the world has figured out that if the viability of these leading-edge technologies is not ensured, an entire generation of technology may be lost.

Mr. Chairman, the support of your Committee and the Administration is vital to a continuing partnership between industry and the government that will ensure the continued effort for materials that will bring us closer to our energy conservation goals. We stand ready to work with you, the members of this Committee and the Administration to implement the programs and actions outlined in this testimony, and we appreciate your continued commitment to conservation programs and the role that our industry can play in meeting your objectives.

(ACA):JSA LAZ

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION DOCUMENT NUMBER: 9201196
ORIGINATOR: 02

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SPEECH: YES NO

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TENTATIVE DATES:

LOCATION OF EVENT: RESTON, VA

TIME OF EVENT: 1:00 P.M.-4:00 P.M.

SUBJECT: AN INVITATION TO THE GEOLOGICAL SURVEY OPEN HOUSE.

****

RSVP: 04/10/92

CONTACT PERSON:

CONTACT NUMBER:

****

INVITATION ACCEPTED? ~~YES~~ (NO)

****

COPIES TO: ENVIRONMENT

REMARKS:

DATE OF LETTER: 04/03/92 DATE RECEIVED: 04/08/92

FILE: P-INVITATION

1196 INV

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA 22092

OFFICE OF THE DIRECTOR

APR 3 1992

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Old Executive Office Building
Washington, D.C. 20506

Dear Dr. Bromley:

You are cordially invited to attend a special event on Friday, April 24, 1992, as part of the U.S. Geological Survey (USGS) Open House at our National Center, 12201 Sunrise Valley Drive, in Reston, Virginia. On Saturday, April 25, the USGS will be opening its doors to the public. With the theme of "Earth Science Takes You Everywhere," USGS scientists and staff will be presenting some 80 exhibits, demonstrations, films, lectures, and presentations to explain the exciting earth science research and investigations underway.

From 1 to 4 p.m. on Friday, you are invited to come out for a tour by special escort through the many exhibits and demonstrations. At 4 p.m., there will be a special presentation in our Auditorium. Concurrent with our open house, the USGS is hosting the spring conference of the National Association of Geology Teachers and the National Earth Science Teachers Association. More than 200 teachers are expected to attend. We will be gathering with them for a reception at 5:30 p.m.

The event for the public will take place on Saturday, April 25 from 9 a.m. to 5 p.m. Please extend our invitation for the Saturday event to your staff and plan to come back again on Saturday and bring your family, friends, and neighbors.

I think you will find much of interest at our Open House and I look forward to seeing you. If you would take a minute to reply on the enclosed form, it will help in our planning for the April 24 event.

Sincerely yours,

Dallas L. Peck
Director

Attachment

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



U.S. GEOLOGICAL SURVEY

SPECIAL EVENT
FRIDAY, APRIL 24, 1992
1-4 p.m.

_____ Yes, I will be able to attend. I plan to arrive at _____.

_____ Yes, I plan to stay for the reception at 5:30.

_____ No, I cannot attend from 1 to 4, but will attend the reception at 5:30.

_____ No, I cannot attend.

If you have any questions, please call the Public Affairs Office at (703)648-4460.

_____ I cannot attend the special event on Friday, but I plan to attend with my family on Saturday.

* * * USGS * * *

Please return this form to: USGS Public Affairs Office
119 National Center
Reston, VA 22092

or FAX to: (703)648-4466.

Please reply by April 10.

U. S. Geological Survey 12201 Sunrise Valley Drive, Reston, Va.
Roadside parking available.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION DOCUMENT NUMBER: 9201123
ORIGINATOR: 02
****
SPEECH: YES NO

FROM: EBERT, James D.: MARINE BIOLOGICAL LABORATORY

DATE OF EVENT: 06/20/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: WOODS HOLE, MA

TIME OF EVENT: 10:00 A.M.

SUBJECT: AN INVITATION TO ADDRESS THE TRUSTEES OF THE LABORATORY AT THE OPENING OF THE NEW MARINE RESOURCES CENTER.

****

RSVP: 04/20/92

CONTACT PERSON:

CONTACT NUMBER:
****

INVITATION ACCEPTED? ~~YES~~ NO

****
COPIES TO: ENVIRONMENT

REMARKS: 4/14/92 - Regretted to Leslie in Ebert's office!
mr

DATE OF LETTER: 04/02/92 DATE RECEIVED: 04/06/92

FILE: P-INVITATION

1123 I

RECEIVED
92 APR 6 A9:33
OFFICE OF THE PRESIDENT
OSTP
MAIL ROOM

MARINE BIOLOGICAL LABORATORY
WOODS HOLE, MASSACHUSETTS 02543

April 2, 1992

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Executive Office of the President
The White House
Washington, DC 20500

Dear Allan:

Seeing my name associated with this letterhead after a lapse of many years may come as a surprise to you. Now that I have passed my 70th birthday my responsibilities at Johns Hopkins are being gradually reduced, allowing me time to devote to the MBL, that grand institution which Lewis Thomas described as "a national laboratory without being supported as such". The Director, Harlyn Halvorson, is retiring this year and while the Laboratory is seeking a successor, I am lending a hand as President.

It is in that capacity that I write today, with the concurrence of Dr. Halvorson and the Chairman of the Board, Dr. Sheldon Segal, to invite you to play a key role in the official opening of the Laboratory's new Marine Resources Center in Woods Hole on Saturday, June 20. It will be a very special occasion coming as it does during a meeting of the Laboratory's Trustees.

It is our fond hope that you would be able to arrive in Woods Hole by 10:00 or 10:30 am. (better still the preceding evening) to participate in the opening ceremonies and specifically to address the Trustees and distinguished guests following a luncheon.

The Marine Resources Center is the realization of a dream cherished by several of Harlyn Halvorson's predecessors including myself. It is a state of the art facility

designed to support advanced research and teaching on the genetics of marine organisms, marine biotechnology, along with a rapidly increasing emphasis on biomaterials.

I do hope you will be able to join us. I can be reached most easily by fax either in Baltimore (410) 516-8537 or Woods Hole (508) 457-1924.

With every good wish.

Yours sincerely,

James D. Ebert

P.S. I'm sorry that Alma's illness caused me to miss Dick Celeste's first meeting as Chairman of the GUIRR. I expect that his energy and vision will revitalize the Council, especially if he can achieve better participation from the industrial side.

cc: Dr. Harlyn Halvorson
Office of the Director, MBL

Dr. Sheldon Segal
Office of the Chairman, MBL

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION DOCUMENT NUMBER: 9201119

ORIGINATOR: 02

****

SPEECH: YES NO

FROM: THE BOARD OF DIRECTORS, AAAS

DATE OF EVENT: 04/24/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: THE OCCIDENTAL RESTAURANT

TIME OF EVENT: 7:00 P.M.

SUBJECT: AN INVITATION TO A RECEPTION AND DINNER.

DAB will attend w/ Lynn B.

****

RSVP: 04/13/92

CONTACT PERSON:

CONTACT NUMBER: 202-326-6639

****

INVITATION ACCEPTED? (YES) NO

****

COPIES TO:

REMARKS:

DATE OF LETTER: 04/01/92 DATE RECEIVED: 04/06/92

FILE: P-INVITATION

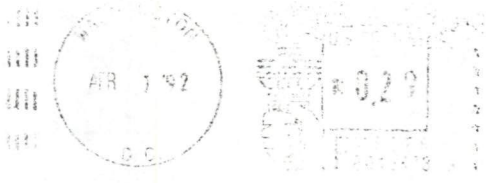
The Board of Directors of the
American Association for
the Advancement of Science
requests the pleasure of the company of

Dr. D. Allan Bromley
and guest

at a reception and dinner

Friday, April 24, 1992
seven o'clock
The Occidental Restaurant
1475 Pennsylvania Avenue, N.W.

R.S.V.P.
(202) 326 6639



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

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH DOCUMENT NUMBER: 9201118

ORIGINATOR: 02

****

SPEECH: YES NO

FROM: COORS, Joe JR.: COORS CERAMICS COMPANY

DATE OF EVENT: 05/20/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: RITZ CARLTON, PENTAGON CITY

TIME OF EVENT: 9:20 A.M.

SUBJECT: AN INVITATION TO ADDRESS THE U.S. ADVANCED CERAMICS ASSOCIATION MEMBERS DURING THEIR MAY MEETING.

****

RSVP: 04/20/92

CONTACT PERSON:

CONTACT NUMBER:

****

INVITATION ACCEPTED? YES (NO)

****

COPIES TO: PHYSICAL SCIENCES

REMARKS: 4/8/92 - Regretted to Vicki. mn

DATE OF LETTER: 04/01/92 DATE RECEIVED: 04/06/92

FILE: P-INVITATION

1118

Coors Ceramics Company
OFFICE OF THE PRESIDENT
4545 McIntyre Street
Golden, Colorado 80403
(303) 277-4002
FAX: (303) 277-4249

RECEIVED
92 APR 6 A10:07
OSTP
MAIL ROOM

April 1, 1992

The Honorable Dr. D. Allan Bromley
Assistant to the President for Science & Technology
Office of Science & Technology Policy
Old Executive Office Building
17th Street and Pennsylvania Avenue, Northwest
Washington, D. C. 20506

Dear Dr. Bromley,

It was great to see you at the NTI Conference last week in Orlando. I particularly enjoyed the great job you did of organizing the morning question and answer session.

It was a pleasure for me to give the keynote speech as I wanted to publicly acknowledge you and the Administration's efforts regarding advanced ceramics and advanced materials.

Recognizing the substantive leadership role you have played in the Administration's efforts to support advanced ceramics and advanced materials, I would be pleased if you would accept my invitation to address the United States Advanced Ceramics Association's members during its May membership meeting. The meeting will take place on May 20, 1992 at the Ritz Carlton in Pentagon City. It would be ideal if you could provide 10-15 minutes of comments at approximately 9:20 a.m. followed by a few minutes for questions.

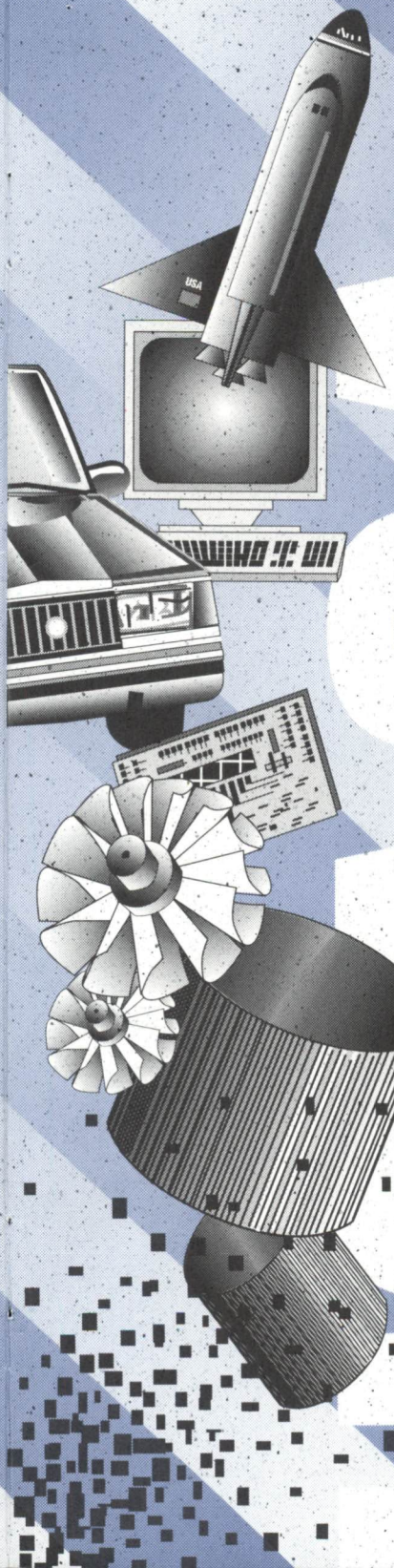
Dr. Bromley, as I said in my remarks at the conference, I believe the Administration and industry have a tremendous opportunity to redirect and restructure our technology efforts during the next few years and I look forward to seeing you again soon.

Sincerely,

COORS CERAMICS COMPANY

Joe Coors, Jr.,
Chairman & CEO

JC2/vb



USACA

UNITED STATES ADVANCED CERAMICS ASSOCIATION
1440 New York Avenue, NW, Suite 300
Washington, DC 20005
Telephone: (202) 63-USACA(638-7222) or (202) 638-1200
Fax: (202) 639-8685

ADVANCED CERAMICS: SURVIVAL KEY

Advanced ceramics are enabling technologies that are revolutionizing our nation's industries. These materials will be the foundation for a new generation of high-efficiency, high-performance automotive, aerospace, defense and electronic products.

The United States and its foreign competitors have identified advanced ceramics as critical to future employment, national security, gross national product and balance of trade. Many foreign governments are working energetically with their domestic producers to develop and commercialize the technologies. The competitiveness and survival of the U.S. industry also depend on the successful commercialization of advanced ceramics.

However, 10 years or more can be required to bring advanced ceramic products from concept to market. To promote the optimum environment for U.S. industry to meet this challenge, USACA has developed an Advanced Ceramics Development and Commercialization Program.

This initiative, entitled "Bridging the Gap," is designed to help the industry grow through advocacy and coordination of the relevant programs and resources of the federal government. The initiative calls for federal advanced ceramic manufacturing, insertion and procurement programs. It also advocates incentives to encourage greater capital investment by manufacturers and end-user "pull-through," and urges protection of the technology and property rights of advanced ceramics companies taking part in government programs.

USACA ORGANIZATIONAL STRUCTURE

Led by the USACA Board of Directors, which is composed of senior-level managers from member companies, USACA is actively engaged in promoting the interests of the U.S. advanced ceramics industry through the work of four standing committees:

- The Structural Ceramics Committee focuses on research and development programs, technology transfer, manufacturing and processing technology, classification, standardization, and health and safety issues.
- The Electronic Ceramics Committee works to enhance the U.S. electronic ceramic industry's competitive position by promoting market opportunities, government support and technology development.
- The Government Affairs Committee seeks to increase government recognition and support of the advanced ceramics industry and promote the "Bridging the Gap" program.
- The Public Affairs Committee promotes increased public awareness of the advanced ceramics industry.

Committee agendas are carried out by USACA staff and working groups, formed to further develop and implement action plans on significant issues.

BENEFITS OF MEMBERSHIP

In addition to the opportunities to participate on the Board of Directors, committees and working groups, USACA membership offers these benefits:

- **Market Expansion:** USACA seeks to identify new market opportunities for member companies and eliminate barriers to commercialization of U.S. advanced ceramics.

- **Government Liaison:** USACA serves as a liaison with Congress and regulatory agencies and, where appropriate, advocates legislative positions on behalf of USACA members.

- **Publicity:** USACA disseminates information worldwide on developments in the U.S. advanced ceramics industry.

- **Publications:** Members receive the quarterly USACA Report and the monthly USACA Update, as well as timely reports on legislation and other issues affecting the industry.

- **Annual Meetings:** Members are invited to attend and participate in USACA's spring and fall meetings. The meetings provide an excellent opportunity to interact and develop relationships with other executives involved in the U.S. advanced ceramics industry, as well as congressional leaders, government agency representatives and the media.

WHAT IS USACA?

Formed in 1985, the United States Advanced Ceramics Association (USACA) represents the interests of manufacturers and users of structural, electronic and other functional advanced ceramic products. USACA is dedicated to the advancement and commercialization of the domestic advanced ceramics industry, a rapidly evolving sector with a multi-billion-dollar future.

USACA is a strong and effective voice on issues of concern to the advanced ceramics industry, including the protection of member companies' competitive future and the need for federal vision and long-range funding to support industry innovations.

USACA is:

- The leading voice for the United States' principal manufacturers of structural, electronic and other functional advanced ceramics;

- The key representative of users and producers of advanced ceramics before government agencies, Congress and the general public; and

- A forum for developing and implementing strategic plans to further the commercialization of advanced ceramics.

MEMBERS

Allied-Signal Aerospace Company
Allison Gas Turbine Division/
General Motors Corporation
Atlantic Research Corporation
AVX Corporation
Babcock & Wilcox
Brush Wellman, Inc.
Carborundum Company
Caterpillar, Inc.
Coors Ceramics Company
Corning Incorporated
Deere & Company
Dow Chemical Company
Dow Corning Company
E.I. du Pont de Nemours & Company
W.R. Grace & Company-Conn.
Hercules Incorporated
IBM Corporation
ICI Advanced Ceramics
Kyocera Industrial Ceramics, Inc.
Lanxide Corporation
LTV Aerospace
Martin Marietta Corporation
3M Company
St. Gobain/Norton Industrial Ceramics Corporation
Sundstrand Power Systems Division/
Sundstrand Corporation
Textron Specialty Materials/
Subsidiary of Textron Inc.
Union Carbide Coatings Service Corporation

MEMBERSHIP CATEGORIES AND DUES

REGULAR MEMBERS

($9,000 or $4,000 yearly dues, depending on size of company)

- ❑ Membership open to United States based corporations, partnerships and joint ventures engaged in the manufacture and/or utilization of advanced ceramic materials.
- ❑ Regular members may hold office and be appointed to the Board of Directors.

AFFILIATE MEMBERS

($3,000 yearly dues)

- ❑ Membership open to corporations that are subsidiaries of regular members, ventures and partnerships in which a regular member is a participant.
- ❑ Affiliate members are not eligible to vote, hold office or serve on the Board of Directors, but may attend meetings and participate on committees.

ASSOCIATE MEMBERS

($1,000 first year dues/$2,000 thereafter)

- ❑ Membership open to manufacturers or suppliers of equipment, energy or services directly related to the U.S. advanced ceramics industry.
- ❑ Associate members are not eligible to vote, hold office or serve on the Board of Directors, but may attend meetings.

For more information on USACA, please call (202) 63-USACA.