

PHOTOS - CUSCO EVENT

PHOTOCOPY
PRESERVATION

Remarks of the President
Technology for Education Event
State University of New York at Albany
November 3, 1994

Thank you very much, Gov. Cuomo.

There are many reasons why I admire Mario Cuomo, but one above all: throughout his career in public life, he has worked to bring people together across their differences to pursue the common good. As we've seen, it's all too easy to divide people. Uniting them around a shared vision of the future is hard, unrelenting work. But it is the work that brings honor to public service, and I honor your governor for doing it so consistently and so well.

We're living in a new world, global markets and global competition, a world in which more and more, education and skills are the key to the future. Your governor understands this very well. He has worked to reduce dropout rates, to ensure that every child reaches school ready to learn, to build schools that are centers of community activity as well as learning, to spur innovation by reducing regulation, and to make college more affordable for hundreds of thousands of hardworking families.

His is a record of educational achievement second to none. And now he is leading the charge into the educational future. The Connect New York Information Superhighway will link more than 6000 schools, 7000 libraries, and countless small businesses and community centers around the state. All students--no matter where they live, no matter what their income--will be able to use advanced information technology to learn from the finest libraries, museums, and research institutions, so many of which are located in this great state.

In our country, education is mainly a matter for states and local communities. But the federal government can help, by providing top-down support for grassroots reform. I'm proud of what my administration has done to become a better partner for states and local communities. Our lifelong learning program means world-class standards for all and the tools to move us toward them. It means youth apprenticeships to connect educational achievement to the workplace. It means the opportunity to serve your country and earn opportunity for college and training in advanced skills.

And it means a new loan system that lowers costs for students and gives you a chance to repay as a small percentage of income over time. Here's what it means for New York: by next

year, 110 institutions in this state serving 160,000 borrowers will be participating in the new program.

Gov. Cuomo believes in technology for learning, and so do I. We've challenged the telecommunications industry to work with the states to connect every school and classroom by the year 2000. I'm proud that under the new Elementary and Secondary Education Act that I signed into law a few days ago, we're going to challenge communities around the country to come together around their own innovative plans to put technology in the service of learning. This is one more example of partnership for progress, and of top-down support for bottom-up reform.

It's vital that elected public officials and local communities expand opportunity. But even more important are the ways that schools and students use that opportunity to build a better future. And here with us to talk about their experiences with new learning technologies are students from schools around this state.

THE WHITE HOUSE
WASHINGTON

November 2, 1994

MEMORANDUM FOR THE PRESIDENT

FROM: Bill Galston
Paul Dimond
Mike Schmidt

THROUGH: Leon Panetta
Carol Rasco
Bob Rubin

SUBJECT: Background on The Administration's Efforts to Promote
Learning Technologies

In preparation for Thursday's Learning Technology event with Governor Cuomo, this memorandum provides the background for a major new initiative promoting learning technologies for which we secured authorization and funding as a part of ESEA. We have attached a two-page summary that describes the Administration's comprehensive program for unleashing the power of new learning tools to achieve Goals 2000.

BACKGROUND

The DPC-NEC Interagency Working Group that you created on Education, Training and Reemployment focused on learning technologies as one key element of your long-term strategy to equip every American with the skills needed to compete and win in the new, globally competitive economy. After examining the potential and the problems in this area, we concluded that the nation is on the verge of three major revolutions:

- in telecommunications -- a modern-day land rush between competing telecommunication, cable, wireless, software, and utility companies to connect homes, schools, and businesses to a truly national (if not global) information superhighway
- in multi-media programming -- the interactive presentation of data, images, and sound that can engage students of all ages in active learning -- alone, with parents, with teachers.
- in teaching -- a new understanding that the work of learning is primarily done by the learner, and that the role of teacher is that of a discovery guide rather than a talking head at the front of a classroom of passive students

To take full advantage of these fundamental changes, the Working Group concluded that we should focus our efforts on challenging learning communities -- teachers and students, developers of standards and curriculum, telecommunication and software companies, learning experts, entertainment and game creators, states and local school districts -- to come together to develop the learning content that can enable students of all ages to achieve the high standards envisioned by Goals 2000.

ESEA, Title III -- Technology for Education. Building on the framework for education technology already enacted in Goals 2000, we worked cooperatively with all of the Agencies and the Congress to authorize and to fund such a Technology Learning Challenge ("TLC") in Title III of ESEA. This challenge will be modelled after the successful community and economic Empowerment Zone challenge that you launched last year. In the TLC, the federal investment will help defray the costs of developing engaging learning content and will include 100 4-year grants, with 10 to 15 of these for \$5 million per year and the remainder for \$500,000 per year. In addition, we will make available the full range of substantial expertise in interactive learning already developed in the DoD and Energy labs, NASA, and Defense Department training programs. The matching investment from the diverse partners to the "Technology Learning Empowerment" application will include a commitment to deploy the resulting interactive learning tools in schools and homes throughout their designated learning community. Major players in the private sector, states and school districts, colleges and universities, and representatives of the teachers have already privately expressed their enthusiasm for participating in the TLC.

Subject to your schedule, we plan to announce the TLC on January 11, the anniversary of the date the Vice-President challenged the telecommunications industry to connect every school in America to the information superhighway.

Attachments: Clinton-Gore Administration: Technology and Learning Initiatives
Summary of the Cuomo Education Record
Summary of the Cuomo "Connect New York" Information Superhighway

Clinton-Gore Administration: Technology and Learning Initiatives

Goals 2000: Educate America Act

- . Provides the national framework and support for bottom-up reform of lifelong learning in homes, schools, colleges, and firms to enable every American student and worker to achieve the skills needed to compete and win in the new globally competitive economy.
- . To help every student achieve to world class standards, and to help the country achieve the National Education Goals, the Act authorizes the Department of Education to work cooperatively to assist each State in formulating a strategic plan for the development and deployment of interactive learning tools for use by teachers and students in school and children and parents at home.

National Information Infrastructure

- . Vice-President Gore and Commerce Secretary Brown head the Information Infrastructure Task Force that is working cooperatively with the States and the telecommunications industry to encourage development and deployment of a nation-wide network for interactive, multi-media communication and discovery.
- . In January 1994, the Vice-President challenged the telecommunications industry to work cooperatively with the States to connect every school and classroom by the year 2000. Already baby bells such as NYNEX, cable, wireless, and utility companies are joining with states and localities to begin to make these connections.
- . NASA, NOAA, the Smithsonian, the Library of Congress, and other Federal agencies are making their materials available on the information superhighway.

ESEA: Improving America's Schools Act

- . Authorizes a program to challenge learning communities -- teachers, students, telecommunication companies, curriculum and learning specialists, entertainment and interactive game producers -- to develop and deploy interactive learning content that can play on the information superhighway between schools and homes.
- . Creates an Office of Educational Technology reporting directly to the Secretary of Education to coordinate all federal learning technology programs
- . Authorizes the Secretary of Education to create a national framework, in partnership with the States and the private sector, that will assure the development and deployment of learning technologies to serve all students, teachers and parents

. Authorizes the Secretary to award grants or contracts to develop a new generation of interactive programming for pre-school children so that they are prepared to learn

Other Federal Learning Technology Initiatives

. DOD has been in the forefront of developing and using interactive and distance learning technologies to achieve higher skills and retraining. DOD has also launched a major program to integrate technology into their worldwide dependents school system.

. DOD, NASA, and the Department of Energy are working cooperatively with the Secretary of Education to make their state-of-the-art learning technologies available to the private market and to schools.

. The Commerce Department, through the Telecommunications and Information Infrastructure Assistance Program, provided \$24 million in grant support in FY 1994 for schools, libraries, museums, and community-based learning centers to deploy interactive communications technology. Programs in New York State received over \$2 million of these grants, including \$500,000 for innovative educational technology-related programs.

TELECOMMUNICATIONS ANECDOTES

(Compiled by Eric Anderson)

AskERIC

One such network is the Department of Education's AskERIC (Educational Resources Information Clearinghouse) service. By sending educational questions through E-mail to AskERIC, educators can receive a response about lesson plans, education techniques, or even more information about Goals 2000 -- either a direct answer or a list of further resources -- within 48 hours.

Senior Net

The Senior Net provides a forum for older Americans to help one another. There's a great story related to this: A 93 year old woman absolutely refused to enter a nursing home unless there was a line installed for her modem!

Computers: Mobile and Personal

We're going to have computers -- in one writer's words -- "as mobile as a watch and as personal as a wallet."

Technology Brings Changes

We figured out new uses each time the television changed, from big wooden boxes on the wall to desk phones, to ones with long cords . . . to the car phones and cell phones that allow us to talk while we drive or walk. We will do this again with the changes in store over the next decade -- one of the biggest changes the human species has ever faced.

Matthew Meredith (Bone Marrow Transplant)

Matthew Meredith -- a six year old boy who underwent a bone marrow transplant, since his doctors recommended that he not begin classes at Randolph Elementary School in Topeka, the school and the local telephone company teamed up to bring the first grade to him through two-way video services and a television camera. The kids in his class got a glimpse of videoconferencing technology that will be common in a

few years.

Mountaineer Doctor Television Project

In West Virginia, doctors are using the Mountaineer Doctor Television Project to link to specialists at West Virginia University. For example, when two-month old Zachary Buchanan had an irregular heartbeat, his doctor sent an image of his heart to a pediatric cardiologist 100 miles away and learned that the condition wasn't serious -- he didn't have to travel half way across the state for treatment.

Georgia Griffith (Deaf and Blind Compu-Serve Worker at White House)

Georgia Griffith -- deaf and blind -- operates the White House forum for Compu-Serve; computer adapted so she can communicate as any other on-line user; **NOTE:** Don't think AGJ has communicated with her directly although she did help set up previous Compu-Serve on-line interview with AGJ.

Stephen Hawking and Information Technology

I'm reminded of an idea of Stephen Hawking, the British physicist. Hawking has Lou Gehrig's disease, but thanks to information technology, he can still communicate not only to his students and colleagues but to millions around the world.

Nashville Student Videoconferences with his Class

One Nashville student has benefitted from this technology: Taylor Vaughn, 7, who has been confined to his Harding Place home since a life-threatening bone marrow transplant December 30, can now participate in his first-grade class from his bedroom through the use of state-of-the-art multimedia videoconferencing technology called Visit Video, which allows Taylor to communicate with his classmates and participate in class discussions.

Texas Telemedicine Project

The Texas Telemedicine Project in Austin, Texas offers interactive video consultation to primary care physicians in rural hospitals as a way of alleviating the shortage of specialists in rural areas. This trial is increasing the quality of care in rural areas and providing at least 14% savings by cutting patient transfer costs and provider travel.

InterPractice Systems Prevents Heart Attack

InterPractice Systems, a joint venture of Harvard Community Health Plan (HCHP) in

Boston and Electronic Data Systems, has placed terminals in the homes of heavy users of health care. An electronic advisory system makes recommendations to HCHP's members about using self care, talking with a doctor, or scheduling an appointment. In one instance, "an 11-year old who regularly played with the terminal heard his father complain one day of chest pains and turned to the system for help; it diagnosed the symptoms as a probable heart attack. The diagnosis was correct."

Titanic Sinking

The tragic story involving the Titanic tells us a lot about human beings -- and telecommunications. As the follow-up investigations proved, when the last ice warnings were sent, the Titanic operators were too involved sending private messages from wealthy passengers to take them. Distress signals couldn't be heard, in other words, because the airwaves were chaos -- transmissions without regulation.

Dutch Relief Worker's Diary in Zagreb

A Dutch relief worker, Wam Kat, broadcasted an electronic diary from Zagreb for more than a year and a half on the Internet, sharing his observations of life in Croatia. After reading his diary, people around the world began to send money for relief efforts. The result: 25 houses have been rebuilt in a town destroyed by war.

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**Testimony of Secretary Richard Riley
Senate Committee on Commerce, Science, and Transportation
May 23, 1994**

Mr. Chairman and Members of the Committee:

Thank you for allowing me the opportunity to testify on the education-related provisions of S. 1822, the Communications Act of 1994. The decisions that the Congress has to make on these complex issues cause me to recall a fabled Chinese curse: "May you live in interesting times."

The term "National Information Infrastructure" (NII) is used to describe many different things. In its most literal sense, it is a seamless web of communications networks, computers, databases, and consumer electronics that will put vast amounts of information at our fingertips. It will tie together our telephone system that reaches 98% of homes; the cable systems that pass more than 90% of homes; the broadcast television and radio stations; the cellular telephone system and other wireless networks; satellites that soon will offer programming directly to owners of dishes no larger than a salad bowl; and enormous databases of information.

But the NII is also much more than that: it is an essential tool for achieving the National Education Goals, and an integral part of our future public education system.¹

I have seen the educational possibilities of the NII firsthand, as I hope many members of the Committee have as well. Two weeks ago at the Department's first Conference on Educational Technology, I saw and talked with children and educators from around the country on a computer screen in front of me. Through the use of CU-See Me, software developed at Cornell University, I was able to see and talk with these children as if they were in the same room, using a high-speed telephone line connected to the Internet - the forerunner of the NII. I asked them how they used these amazing technologies in their studies. They said they used the Internet to further their classroom learning, to do research in libraries across the country and the world, and to connect to experts and other students around the country. In turn, they asked me what I did as Secretary of Education. That's when I started to have some doubts about the unbounded

¹For a more complete discussion of the applications of the NII for education and lifelong learning, see "A Transformation of Learning: Use of the NII for Education and Lifelong Learning," in *Putting the Information Infrastructure to Work: A Report of the Information Infrastructure Task Force Committee on Applications and Technology*, U.S. Department of Commerce, National Institute of Standards and Technology, May 1994. This is available electronically on the ITTF bulletin board, (202) 501-1920, and on the NIIA gopher server, ntiia.doc.gov.

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VP- [handwritten initials]

benefits of this technology — but I've since gotten over them.

In addition to these uses, you should also know that teachers can use this technology to alleviate one of the largest problems of the teaching profession — a disconnection with their peers. Networks of educators are springing up across the nation, addressing long-felt needs. We have seen the successes of teacher networks, and want to help other teachers replicate them. We began this process with our technology conference, where every state team included two teachers, and many sessions focused on teacher networking. We were glad to have Reed Hundt, chair of the Federal Communications Commission (FCC), speak at the Conference and share his vision for developing a communications network that provides people the broader base of education and learning opportunities that they strongly desire.

The Department of Education is already a well-known presence on the Internet. Teachers, parents, and school administrators who are "on the Net" now have almost immediate access to legislation, funding opportunities, exemplary programs, and soon, a broad range of technical assistance services.

We are also working to make the Internet simpler to use. Through the Department's AskERIC service, educators are able to get on the Internet to get answers to their questions about education — from new curriculum standards to effective teaching practices — and get answers within 48 hours. By sending any educational question through electronic mail, educators can receive a response that gives them either a direct answer to their question, or further resources to consult. Every week, more than 200 new questions come in, and the information that ERIC has made available on-line, such as sample lesson plans and answers to frequently asked questions, is accessed more than 15,000 times a week. The service was recently recognized as one of the most innovative uses of information technology in the country by being named as a finalist for the 1994 Computerworld Smithsonian Awards Program. But there is still far to go. There are more than 2 million teachers in the country, and we would like every one of them to be able to use these tools.

What I have come to understand so well is that these new resources must be tapped to enable all students to achieve high academic standards. These resources are — in my opinion — central to our conception of public education. These technologies are a way to individualize instruction; a powerful resource for supporting teachers and their professional development; a vehicle to connect students' learning to the real world; a way to connect schools to the home and community; and a means to extend learning beyond the traditional 9 to 3 school day. The National Education Commission on Time and Learning recently published a report showing that we must increase both the amount and the quality of instructional time for our students, and the NIE will help to make this possible by allowing students to learn in homes, libraries, and other sites, both during and after school. Small schools, schools in remote rural areas, and schools wracked by

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poverty would all have access to the same rich learning resources.

Partnerships of state and local educational leaders and the private sector are already leading to significant investments in bringing the NII to classrooms and learners. Last year, for example, the Florida State legislature committed \$55 million over three years for classroom technology and connectivity. Utah has committed over \$45 million since 1990. Tennessee's 21st Century Schools Program includes \$8 million per year for technology. Many others have made, or are planning to make, major investments in this area. The telecommunications industry is working closely with educators in these efforts, and we want to encourage these partnerships. In Palmer, Alaska, for example, the Matanuska Telephone Association has provided full connectivity through fiber optics between local schools at no cost to the schools. The Department of Education is working to support efforts like these through the Star Schools program, which focuses on distance learning. For example, the Lockie Elementary School here in Washington receives instructional programming and staff development activities from educational institutions around the country via satellite and coaxial and fiber optic cable.

Giving our students access to these is important not just to help them today but also to build a nation of users who are prepared to use information for their entire lifetimes. The private sector, above all, should be looking to develop a future market of Americans who will use new telecommunications resources, not just looking to make a profit from selling services to schools. If we provide connections to the schools today, the payoff in the future will be very great.

Yet while some states and communities have moved far along, we cannot afford to leave others out. All schools, all classrooms, all learners and all teachers must have access. The federal government can play a role in helping to make this happen. The Department of Education will support States as they work to integrate these new technologies into schools and education reform efforts through the Goals 2000: Educate America Act. Current and future research and development efforts by this agency and others can provide knowledge about the best ways to use the NII in education.

This fall, the National Center for Education Statistics will undertake a study of computer connections in America's classrooms. When this study is complete, we will have a comprehensive picture of what is being done to ensure that there is an on-ramp to the information highway in every classroom. But despite commitments by many telephone and cable companies to build these ramps, we need to take the next step and ensure that there is real, universal service, at affordable rates, for educators and their students.

The legislation before this committee presents an opportunity to take this critical step — enabling schools to have access to the information highway over the long term.

I believe there is a great risk that the remarkable educational possibilities of the NII

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will not come to pass. As you know, the economic pressures to develop the commercial and entertainment applications of the NII are already very strong. Unfortunately, up to now, the pre-K to 12 education market -- with the exception of "edu-tainment" software for home use -- has not presented enough of an incentive for the private sector alone to guarantee access.

These new resources are -- in my opinion -- central to our conception of public education. They should be free. If they cannot be free, they must be as inexpensive as possible. The principle of "free" public education for all children is the bedrock of our democracy. Not cheap, inexpensive, or available for a fee but in its very essence "free." Educational institutions small and large -- schools, libraries, literacy centers, community colleges, universities, early childhood centers -- should have free access to these services. The Department and the educational community stand ready to work with the FCC in building a policy and regulatory framework for these provisions that supports learning as much as possible.

The preferential rate language now in S. 1822 recognizes that access to telecommunications is a serious problem for the nation's teachers. While nearly every school has computers, the vast majority of these machines are not linked to the rich new resources I've been talking about. This is due in part to school traditions that frown on teachers having telephones, and in part to the fact that in most locations, schools must pay the same rates as businesses for telephone lines. If we can't connect the information highway with all educational institutions at once, then schools, libraries, and literacy centers should be high on the list of public institutions that are feely linked to the information highway. We can have the greatest impact on our nation's future by affecting what occurs there.

It is important to remember that the American people want more than an entertainment highway. They want a road that takes them to learning opportunities more than anything else. A recent survey commissioned by the Benton Foundation found that while 59 percent of people gave interactive educational programs the highest possible rating on a scale of importance to their lives, only 22 percent thought the same of home shopping.² Parents understand what learning means to their children, especially in a technological age. As a blue-collar worker in one of the survey's focus groups said about his kids, "If they're going to make anything of themselves at all, they are going to have to have a lot of education."³ As the physical, technological links are built -- as the improvements are made that will connect schools with homes, students with distant libraries and classrooms, and parents with teachers -- we must ensure that access is universal.

²Benton Foundation, Communications Policy Briefing 2 (1994), p. 4.

³Benton Foundation, Communications Policy Briefing 2 (1994), p. 9.

I am dedicated to the principle of competition within a marketplace, and to the ability of companies to receive a fair rate of return on their investments in building the information superhighway. But we cannot allow this highway to become completely lined by billboards, or a road that leads only to virtual movie theaters and arcades. There can be no highway robbery. The NII has enormous potential to foster learning across the land, a potential that the Congress and your Committee's action on the bill has the ability to further with the inclusion of strong language on educational access to the NII.

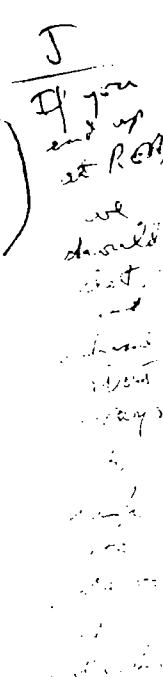
The Vice President has challenged the telephone and cable companies to wire every classroom in America by the year 2000—urban and rural, from the richest suburbs to the inner cities. If we leave anyone behind, we will be ignoring the promise that these technologies represent. Our educational program is all about high standards for every student, because we know that every child can learn. We must provide students, teachers, and parents with free access to the NII so that they may prepare themselves and our children for the world of the 21st century.

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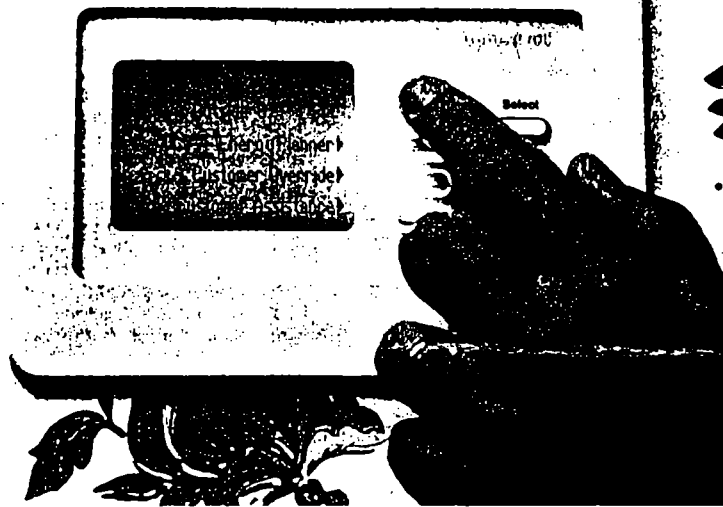
BY STEVEN R. RIVKIN

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Steven R. Ryken is a Washington communication lawyer.



Families in Little Rock, Ark., are plunging into a network to save money and get onto the information superhighway.



The new home computer that helps conserve energy and transmit information.

Ark., near Bill Clinton's hometown, have volunteered to link up their electric service to a computer and telecommunications network with the ability to save considerable energy and money. This Little Rock neighborhood was chosen, in part, because its houses are so big the residents would readily appreciate such savings. And the results will be so beneficial that the power company intends to extend the service to nearly a third of all its customers, more than 440,000 homes in Arkansas, Mississippi and Louisiana. Then it will be able to forgo building any new power plants for at least 20 years.

The advantages will be so obvious that most other power companies will have good reason to follow suit. With one swift, elegant stroke, companies like Entergy can sharply reduce the future costs of making power at the same time they are capitalizing the cost of building the great information superhighway.

The source of this magic lies in reducing demand and conserving energy. Powerful home computers, linked by fiber-optic cable, will enable consumers and utilities to work together for the first time to accomplish these savings. Enough will be saved in unnecessary generating plants and in monthly utility bills to make the fiber-optic cable practical. And that means that avenues for dozens or hundreds of additional channels will have been created virtually free.

I know a bit about this. I've been practicing communications law in Washington for more than two decades, and I have been urging the power companies for years to get into the great race. Some have paid me for my advice, but, until recent-

ly, most of them have done little about it. Some of them have bought into cable TV in a big way — but only to invest in the entertainment business. They haven't fully grasped the enormous potential that the cable itself gives them:

To read meters remotely, instead of sending out the meter reader once a month... To conserve energy by charging fees flexibly... To save everybody money. Last summer in a paper for the Progressive Policy Institute of the Democratic Leadership Council, Jeremy Rosner and I proposed this as a benign way to pay for Bill Clinton's commitment to build the superhighway. Now, in Chenal Valley, it's about to happen.

One thing new here is the ability to transmit information by laser, or focused light, over fiber-optic cable (thin strands of glass) in close proximity to power lines — or even braided into a power company's copper or aluminum wires. Before now, an electric power line would destroy communications if it was too close.

In Chenal Valley, Entergy uses "fiber to the feeder," that is, new fiber optics from the power company's main computer to the edge of the neighborhood, and TV's coaxial cable from there to the home. Such TV cable is already in place on the street in front of 97 percent of the nation's houses.

The primary objective is to create a telecommunications link to and from everybody's electric meter so that power demands can be adjusted on a moment-to-moment basis. Signals can actually be sent back and forth from the house to the power company every 15 seconds or so. This will enable the power com-

pany to reward the customer for shifting electricity consumption from peak times to off-peak times when power plants are often idle. Estimated monthly bills can be called up at any time on the new home computer screen, and at the end of the month the customer will have an itemized running cost of each appliance.

Moreover, as an enormous added bonus, the power company will have built a digital state-of-the-art telecommunications system over which vast amounts of additional information can flow. It's an asset the company can then rent to other providers, like telephone companies (both local and long-distance) and cable TV companies. For starters, Sprint, the feisty long-distance phone company, signed up just last month.

Once the new highway is in place consumers will be able to send or receive vast amounts of information with great speed — transmitting entire, up-to-the-minute electronic encyclopedias, receiving messages worldwide, seeing current movies as well as the full range of cable and network TV, sending out color images, hearing the sounds of La Scala from Milan.

LOOK AT ENTERGY'S NUMBERS tells why, suddenly, while most people weren't looking, the power companies have barged onto the scene. Its subsidiary, Arkansas Power and Light Company, says hitching up its central computer to each house will save it from having to build 1.5 kilowatts of capacity per house. Over 20 years, building and operating that much additional plant would cost \$1,257 per house. But it should cost Entergy only about \$585 per house to install the telecommunications system, counting in the additional efficiency advantages that technology will enable in both the power and telecommunications businesses. That way the electric ratepayer can pay for much of the superhighway, and the sooner the better.

To telephone companies, this outcome is perverse, because the phone companies have been laboring mightily to get permission to charge the telephone ratepayer to pay for the highway. Unless they gain access to information and video businesses, phone companies say, they say they will not be able to pay the \$300 billion it could cost to modernize for 30 more years. By contrast, in Japan, Nippon Telegraph and Telephone Corporation, the national telephone company, is aiming to install complete fiber networks by the year 2015, with government help likely.

The American companies have been urging Congress to repeal the "telco-cable cross-ownership rule" which bars them from providing cable TV in their home territories. Until the rule is changed, or until the phone companies accept the role of being common carriers for others, state regulators will not require that telephone customers pay for the modernization. And fighting the rule change every step of the way have been newspapers, broadcasters and cable companies, who view the phone companies as potentially dangerous competitors.

Curiously, the power, cable and even the phone companies are working in one way or another with similar designs, though the phone companies are still trying to get the country to pay for modernizing their existing plant at a much greater cost. Entergy has invested in a former Southwestern Bell affiliate — First Pacific Networks — a Silicon Valley manufacturer of telecommunications switching gear. First Pacific has invented, and has installed in Chenal Valley, a way of bypassing a phone company's central exchange, by putting switching intelligence in everybody's house and linking those houses with a bountiful communications network — emulating what small personal-computer networks have done to render the mainframe obsolete. And several American cable and phone companies, hedging their bets, are jointly building similar slimmed-down systems in little-noticed partnerships in England — in one instance using First Pacific's technology.

But Chenal Valley will be the dramatic breakthrough in terms of energy as well as telecommunications. Residential electricity customers in the United States for the most part, pay flat rates for power, averaging between 5 and 8 cents per kilowatt-hour. Participants in the Chenal Valley experiment will pay rates that could range from as low as 4 cents at times of low use to 24 cents at very infrequent peaks in summer. Computers with the feel of automated bank teller machines will be installed in the Chenal Valley homes to help the customers fine-tune their cost and comfort.

Prior tests elsewhere in the country, with more than 1,000 participants using equipment that's less user-friendly have realized savings of up to 33 percent on customers' bills and have won overwhelmingly positive customer reaction. Residential electric bills nationwide totaled about \$76 billion in 1991, saving a third of that is no trivial amount.

The trick will be to cajole the telephone and cable companies into joint ventures with the power companies. That way all three and their customers can share in the savings. No grand legislation is needed, only common sense all around.

to get the paper from P.P.

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

April 8, 1994

REMARKS BY THE VICE PRESIDENT
TO THE NATIONAL EDUCATION ASSOCIATION

National Education Association Convention Center
Albuquerque, New Mexico

THE VICE PRESIDENT: Thank you very much, ladies and gentlemen. That does me a world of good to get that kind of warm welcome here. I really appreciate it more than I can tell you. Thank you very much. And I want to thank Keith Geiger (?) for that very generous and warm introduction. Thank you, Keith, and thank you for your leadership of the NEA. Keith worked his way up to talking about me being president of the United States Senate and voting on that budget bill, the new economic plan that has turned our country around.

I'm glad you mentioned that because my experience in the last 14 months of voting as Vice President has been an elevating experience that has made me more optimistic about life because I've noticed a pattern which, with all due respect to the news media, has almost been completely missed. (Laughter and applause.) But if you think about it -- you watch -- if you think about it, here is the pattern that I suddenly realize is there. Every time I vote, we win. It works every time. It changed my whole outlook. (Laughter and Applause.) And no vote I've cast in 17 years has been more important than that one and had a bigger impact. And I appreciate the chance to cast it.

I want to acknowledge with thanks and respect to Governor Bruce King and his wife, Alice -- longtime friends to me and my family -- and to my friend and colleague, Jeff Bingham, who was my stalwart partner and friend and co-worker in so many of the issues that you all are discussing at this unique conference, and who does such an outstanding job for the people of New Mexico and of the United States. And it's been my pleasure to have a chance to work with his wife, Anne, on the information superhighway issues as she is over at the Justice Department.

To a person who, really, I have boundless respect for, Secretary Riley is a combination of character and competence and courage. And he just provides outstanding leadership in the field of education. It is just a joy to be able to work with him. (Applause.) He'll tell me later I laid it on too thick, but really, it is an honor to serve in the Cabinet with Secretary Riley.

And to Congressman Steve Schiff and to someone who is not present, my friend Congressman Bill Richardson, who's been a great friend of the NEA, as well as to State Senator Mannie Aragon (?) and Speaker Ray Sanchez and Mayor Martin Chavez. And to others who are helping to lead this great organization -- the NEA, Bob Chase as vice president; Marilyn Monihan as secretary-treasurer; Ken Melly (?), my longtime friend, as assistant executive director; Charles Boyer, president of the NEA here in New Mexico.

And while I'm at it, ladies and gentlemen, Keith was kind enough to mention the fact that I've long been a friend and ally of the NEA. I can say the same thing from going in the other direction because you've been a longtime friend and ally to me and you have made a huge difference in every race that I've been involved

MORE

in. And on behalf of President Clinton and our whole administration, I would like to again thank the NEA for getting us elected and giving us the chance to bring change to America. We appreciate your help. Thank you. (Applause.)

Now, I'd like to talk a little bit about the subject that you're discussing here -- technology and education. And I'd like to start not with expansive promises and far-ranging visions, but I'd like to start instead with a recognition of the fact that many in the field of education have at times in the not-too-distant past -- say, the 1970's -- gotten their hopes raised for the prospects of computers in classroom and technology as a way to enhance the productivity of education and then found that the reality did not match the rhetoric and that the hopes that had been so raised were, in too many instances, dashed because there just didn't seem to make that much of a difference. There wasn't the software. There wasn't the teacher training. There wasn't the continuity. There were all kinds of problems. The machines were nice but didn't really make all the difference that people hoped.

So I know there are a lot of people here at this conference who probably went through that experience and felt a little bit burned emotionally and are still a little bit reluctant to once again get back into the business of hoping that there's something there that can make a tremendous difference.

I was looking at a quotation recently, and here it is: "For more than 100 years, much complaint has been made of the unmethodical way in which schools are conducted. But it is only within the last 30 that any serious attempt has been made to find a remedy for this state of things. And with what result? Schools remain exactly as they were." That was written by John Amos Comenius in 1632 -- (laughter) -- in a book called The Great Didactica. And it's worth recalling that this kind of discussion has, in different ways, taken place before.

But in 1632 the world was going through some interesting changes. Only 13 years before that, a young man named Rene Descartes at the age of 23 on the banks of the Danube River had a startling vision based in part on the visual metaphors that came out of Copernicus' discovery of the new model for the solar system. And Descartes' vision was of all matter, all the universe being made up of dead, inanimate pieces of matter that moved in predictable patterns. And many historians say that in that moment what we call the Scientific Revolution really began.

Three hundred and seventy five years later, we now see a new phase in the scientific revolution in addition to inductive and deductive reasoning. We have a whole new branch of knowledge creation that the scientists are calling computational science. One of my rules of thumb is when you're talking about important things -- and there are only two of them -- and a third one is discovered, that's a big deal.

And that's the case with computational science. Computers are now beginning to transform the way we think about this world we live in. The effects are also creating a lot of problems. There has been an explosion of data. Information about everything is now available in much larger quantities than was ever dreamed possible only 30 years ago. Indeed, in some fields of knowledge, the total quantity of knowledge is doubling every eight months.

And so the traditional approach to keeping up with a field of knowledge seems, to many people, no longer adequate if the total sum of that knowledge is doubling in less than a year and the new knowledge is displacing some of the old.

The Library of Congress, I was told on a recent visit, now receives 10,000 periodicals a year from the nation of India alone. There is a surplus of data. And if you look at the delicate, indecipherable process by which data is turned into information and then further transformed into knowledge conveyed to the mind of another human being and then with luck and time gradually ferments into wisdom, it's interesting to ask, what happens to that process when, at the front end, in the first step, there is suddenly an enormous explosion in the amount of raw data. Does it clog up the pipes? Does it create the irony that more data can result in less wisdom? One is tempted to believe that at times, when we look at the problems we face around the world and all the information we have available to solve those problems, if we could only figure out how to turn it into knowledge and convey it to others in the right way -- and convey it to ourselves in the right way.

And so it becomes obvious to more and more people outside the teaching profession that education, more than ever before, is the key to our future. But it is also apparent that education may have a somewhat different role to play in a world with such vast quantities of raw information. Any approach in years past that relied on learning lots and lots of facts in order to accumulate knowledge looks a little different in a world where all those facts become instantly available to students outside of memory, on line as you could say.

And so many ask, how can we cope with this new reality, and what role can education play? A friend of mine who works in the field of computational science once told me that if you tried to analyze and describe the human mind in terms that computer scientists use to describe the way the mind handles information, you could say that we people have high resolution but a low bit rate. Now, what does that mean? (Laughter.) I asked him what that meant, and he said that if we tried to absorb information bit by bit by bit, we don't absorb it very rapidly that way.

Years ago, the telephone company, back when there was one telephone company, did a lot of studies and found out that seven digits was the most we could keep in short term memory and then they added several more. (Laughter.) But the other half of that -- high resolution -- is the hopeful part of it. That, my friend told me, means that if we see thousands or millions or billions of bits of information arrayed in a recognizable pattern, we can glance at it and absorb and understand all that information in one gulp -- the Milky Way, a map of the United States.

And so, clearly part of our challenge in this new era of such vast amounts of information, is to find better ways to form lots and lots of information into patterns that we can recognize and gulp in large quantities.

The new generation of computers that are now coming off the manufacturing lines, unlike the ones that were tried so hopefully in classrooms in the 1970s, have so much more power to deal with large quantities of information that they can make a dramatic difference in our ability to do two things: First, our ability to array large quantities of information into recognizable patterns; and secondly, they can make a huge difference in our ability to sort through large amounts of information to find the needle in the haystack that we're looking for at any given moment about the particular subject that we're interested in at that moment.

Now, here's the catch: These powerful machines that can make a huge difference in our ability to navigate through all the information that's out there now cannot talk to each other. They cannot convey these patterns that contain lots of information from one place to another place unless the lines that connect them can handle large amounts of information flowing through them. This

phrase, the information superhighway, really began as a simple metaphor describing the difference between the little two-lane roads that criss-crossed America at the end of World War II that were inadequate when Americans bought automobiles in such large numbers.

I remember when I was a young child driving back and forth from Carthage, Tennessee, to Nashville, Tennessee, and Highway 70 all of a sudden was just clogged bumper to bumper for almost 50 miles on some occasions. And then the interstates came in -- the superhighways to handle the big increase in the number of cars and trucks. Well, the so-called information highways that we have in a great deal of our country, were built for telephone conversations and they don't need that much information.

And so it makes sense now to build networks of information superhighways that can convey large amounts of information and take them right to the classroom. Our administration has called upon the industries involved and set as a national goal the linking of every public school classroom in America to this information superhighway by the turn of the century. We believe that it can be done. And there are many hopeful signs that it is now in the process of being done.

We know also that unless we take a new approach to greatly improve the access that teachers have to the tools that people in other professions are increasingly gaining access to, then we're going to be in trouble. (Applause.) And we've got to change that.

Right now, 22 percent of our classrooms have a telephone line. That means that more than three-quarters of our classrooms do not. That doesn't make any sense -- 100 percent of our classrooms should be hooked up. (Applause.)

You all know the statistics about the challenge -- the math scores of the top one percent of our high schools seniors put them in the 50th percentile in Japan. You know the dropout rate -- 29 percent of ours, compared to nine percent in Germany and six percent in Japan, and, you know, that's just got to change. And the 22 percent of our classrooms that have telephone lines, what percent do you think have modems? (Laughter.) Four percent, four percent. Well, you know, that's just not right. We cannot move into this new era of education when only four percent of our classrooms are able to take advantage of it. And our administration is committed to changing these facts and making this new technology is available.

I believe in my heart that by the turn of the century, and in many, many places well before then, it will be possible for children in every classroom to plug into digital libraries; to plug into the Library of Congress; to explore a whole universe of knowledge at his or her own pace driven by his or her own curiosity. We're determined to make these advantages for American students available all over our country.

And let me say in echoing what Secretary Riley said earlier -- and, of course, he and I have worked together so closely on this -- we are determined that this nation cannot and will not become a nation of information haves and have-nots. It has to be available in rural areas, in poor areas, in every school. (Applause.)

Last week, the President signed the Goals 2000 bill. I'm sure you all saw the bill signing ceremony. Secretary Riley was there and has talked to you about the changes that it will bring. And I want to discuss a couple of aspects of this Goals 2000 package, and how they fit in with this vision of the way we can give our schools the advantages of the national information infrastructure. This Goals 2000 measure is going to develop and adopt national

performance standards. As you know -- you all know exactly how it works and that it aims to improve teacher training, textbooks, instructional materials and technologies.

And we need to set standards that we and our children can be proud of and will enable us to have a population that is better educated than any population in the world, and a work force as educated and skilled as any on the face of this planet. And that's why it doesn't have mandates, it has standards that teachers and parents want to, and can, reach. And to make sure these standards are reached, we're prepared to help with new and innovative approaches that many of you are coming up with and that many of you have talked about at this conference.

Your role as pioneers and guides in making sure that the information that is available over this new infrastructure applies to the standards of your communities and that states adopt is absolutely crucial. Your role is the key. You can say that in this new era the role of teachers is greater than ever before.

This information superhighway, after all, is going to break through traditional barriers by bringing resources and experts from around the world into your classroom. Now, that, also, is not a new idea. You may have heard the phrase, "bring the world to the child." That was the motto of a museum constructed in St. Louis 90 years ago, built because of the success of an exhibit at the World's Fair that offered a view of the university of the future.

Well, the idea of visual education and access to information about other parts of the world isn't new, but with e-mail and video conferencing and networking and these new, more powerful computers, the possibilities are much, much larger than ever before.

Secretary Riley's establishment of an Office of Educational Technology, Deputy Secretary Kunin's work as Chair of the Committee on Education and Technology, and the technology planning grants in the Goals 2000 act are among the things that show our conviction that technology has a crucial role to play in the future of education.

Let me give you just a couple of examples of how students, parents and teachers will both get and use this information. The Secretary talked about linking teachers to one another -- that is an important role because teachers can use this new network to deal with the current problem of being disconnected from your peers. Just as it is crucial for students to be linked, teachers also need networks to share common concerns and experiences, whether on a curriculum or effective teaching techniques.

One such network is the Department of Education's Ask ERICH Service. ERICH stands for Educational Resources Information Clearing House Service. By sending educational questions through e-mail to Ask ERICH, educators can receive a response, either a direct answer or a list of further resources, within 48 hours. You can ask about lesson plans, education techniques, or you can ask for more information on Goals 2000 or lots of other things. Are people using it, are teachers using it, and does it help? Absolutely. Already, every week, more than 400 questions come in from teachers around the country, and the information which ERICH processes is immediately available on-line. Frequently-asked questions and answers are then accessed more than 65,000 times a week.

Teacher networks are a success -- they work. Teachers need to make wider use of these networks. And Secretary Riley is having the first conference on educational technology in May to help other teachers replicate the success of those who are already using it.

Now, this brings up another development in the information superhighway that took some people by surprise. The old saying, "there's strength in numbers," shows up in this network because people are finding that when lots of folks with personal computers and modems work together on the same problem, like how to make the best lesson plan in geography, or whatever, the results can be much more powerful than if all the work is done in one central location by a powerful computer or by a single group of people just looking at the problem in the same way.

I noticed -- just to illustrate this fact -- I noticed a article in one of the science sections of the newspaper a couple of weeks ago about a mathematical problem in the area of codes where these scientists had put together two giant prime numbers that could be multiplied together to serve as the basis of an unbreakable code, and they confidently predicted that the most powerful computer likely to be created in the foreseeable future would take four quadrillion years to break through to the answer to that problem.

Well, that got out there on the information superhighway, and folks took it as a challenge. (Laughter.) And somebody organized several thousand people with personal computers to break up the problem into little bitty component parts and spread it around, and now they expect the answer in a few weeks. (Laughter.) Four quadrillion years ahead of schedule. (Laughter.)

Now, there's a lesson in that, and I really do sincerely believe that there is a deep lesson in that. There are two kinds of computers that they tell us about now -- the kind that has the powerful central processing unit that sends out to the field of memory to get information and bring it back and work on it quickly, and then put the answer back into the memory field; and then there's the new kind that they call parallel computers, or massively parallel computers. And the difference, I'm told, is that instead of having one big powerful central processing unit, they break it up into lots of little bitty processing units and they spread them all around through the field of memory, so that every place some of that information is stored, a little bitty processor is there.

And then, when a big problem has to be solved, all of those little bitty processors attack their little piece of the problem at the same time, and all the pieces of the answer are assembled very quickly. So instead of the very powerful unit having to go out and back so many times, they all do just a little bit of processing and bring the answer together in the center.

Now, when you stop and think about it, isn't that similar to what happens in democracy? You could say without too much of a stretch of the imagination that the reason the Soviet Union collapsed and the reason communism failed is that it was just impossible for all of those central planners to figure out what was going on out in every part of that empire and bring all that information back and make decisions. They didn't make very good decisions; they couldn't make very good decisions. They weren't close to the information they needed on which to base those decisions. And when the pace of change speeded up, they were completely overwhelmed.

Our nation began with the revolutionary principle that the average citizen who was closest to the information about his or her life is the person best capable of understanding what needs to be changed, what needs to be kept, what decisions need to be made about the future. And then, when all of our citizens in this nation we love do that at the same time, and their verdicts are collected through free speech or at election time, then the answers, by and large, are much better as a basis for guiding the destiny of a nation and the decisions of some dictator, or some communist ruler trying to

do everything there in the center. You could also say that capitalism works that way, too.

But, ladies and gentlemen, education has to work that way. You know that; you do that all the time. But now that we have these new technologies, we've got to spread them around, and we've got to make them accessible to every teacher in every classroom as we've been saying up here. And the net result will be to lift our ability to equip the children and others seeking education in this nation as we have never been able to do it before.

Let me give you just a couple of other quick examples. There's something called the Senior Net. Anybody here heard of that? It provides a forum for older Americans to help one another. I heard a story the other day that I think is just great. A 93-year-old woman whose family circumstances changed absolutely refused to enter a nursing home unless there was a line installed for her modem. (Laughter.) That's a true story. (Applause.) And I don't really blame her at all. (Laughter.) Sometimes we think that only young people are comfortable with technology. Some people say that is one of the reasons why some teachers have resisted technology. I don't believe it, although I have heard many times that a child is the only one who can stop 12:00 from flashing on the VCR. That's true in my house. (Laughter.)

But it's a pothole on the information superhighway, but -- (laughter) -- but the truth is that telecommunications technology will benefit people of all ages, from one to 93 and older. Right here in New Mexico, the La Plaza Telecommunity Foundation formed an on-line computer network in Taos County that is helping everybody of all ages in that community.

Well, in any event, there are many partnerships that we need to create, there are many new approaches that we need to take. One partnership involves our national labs, and Governor King and Senator Bingaman certainly know how important that is. And, incidentally, today I'm pleased to announce that Secretary Riley and Secretary O'Leary from the Energy Department will be signing an agreement that will enable the two departments' labs, Education and Energy, to work together in enhancing science, mathematics and technology education, and this is a step forward. (Applause.)

This means that we'll have a lot more programs like the partnership here in New Mexico between Los Alamos and Sandia and New Mexico Tech Net, the University of New Mexico and Philips Laboratory.

But in closing, I have often been struck by a saying at the Madison building of the Library of Congress on Capitol Hill, which is filled with research tools and fascinating exhibits. But on the wall there is something that James Madison wrote. He wrote: "What spectacle can be more edifying than that of liberty and learning, each leaning on the other for their mutual and surest support?"

We must take advantage of the new opportunities in education that technology is now truly bringing. And one of the single most hopeful signs I've seen in a long time is this gathering, this conference of teachers who are dedicated to creating the kind of future that our country deserves, and I congratulate you for it, and thank you for the opportunity to be here. I appreciate it very much. (Applause.)

END

TELECOMMUNICATIONS AND INFORMATION INFRASTRUCTURE
ASSISTANCE PROGRAM
FY 1994 GRANT AWARDS

★ AK

File No. 02-40-94024 University of Alaska, P.O. Box 756520, 8th Floor Gruening Bldg., Fairbanks, AK 99775-6520. Contact: Mr. John A. Lehman. Telephone: (907)-474-6275. Funds Awarded: \$612,506. Total Project Cost: \$1,608,583. The University of Alaska, the state, the K-12 education system, public broadcasting, the library community, and the community at large will integrate diverse networks which will result in 81% of the population of Alaska having non-toll access to a combined education/government/library network. The University will determine approaches to K-12 access using direct connection in some cases and/or dial up access to leased lines or frame relay systems of the University and state government. The Fairbanks Northstar Borough School District will be the direct access site and the Sitka area is applying for a separate planning grant to develop regional access. The project will also connect community networks in Anchorage, Fairbanks, and Juneau, and will integrate the University ITV system with public broadcasting facilities for cost effective delivery of distance education.

AL

File No. 01-60-94094 City of Huntsville, Alabama, 308 Fountain Circle, Huntsville, AL 35801. Contact: Mr. Joe Vallely. Telephone: (205)-532-7350. Funds Awarded: \$50,000. Total Project Cost: \$301,915. The City of Huntsville will develop a plan for the design and testbed deployment of a model architecture for local access to the national information infrastructure. The project will include: (1) an executable plan to provide no-cost, wide area public access to a robust, locally oriented node on the information highway that will include dial up access and access through the deployment of information kiosks; and (2) the design and implementation of a structure for information services related to community health and human services, public safety, recreation, education, public libraries, and defense-oriented economic diversification.

AR

★ File No. 05-40-94007 Arkansas Educational Television Commission, 350 South Donaghey, Conway, AR 72032. Contact: Ms. Susan Howarth. Telephone: (501)-682-2386. Funds Awarded: \$200,000. Total Project Cost: \$419,056. Arkansas Educational Television Commission intends to demonstrate the use of an integrated, mixed use network by connecting a pair of towns in different counties of the state to share telecommunications resources. The Commission will establish a wide area network (WAN) in the county seats of the test counties. The model to be created will be an integrated computing network containing a school information center, a teleconference center and public access computers strategically placed throughout the community. The intended result will be a system for universal access to all area citizens.

AZ

File No. 04-40-94092 City of Phoenix, 200 West Washington Street, 17th Floor, Phoenix, AZ 85003-1611. Contact: Ms. Kristine McChesney. Telephone: (602)-256-3393. Funds Awarded: \$50,000. Total Project Cost: \$100,000. The City of Phoenix's "electronic bus" will extend city and community based services and information to area residents, using multipurpose workstations at existing city facilities. Plans are for a single user interface and point of access to a wide range of services; utilization of existing facilities and trained staff; information partnerships with other community organizations; and introduction of several emerging technologies.

CA

File No. 06-40-94010 San Francisco Public Library, Civic Center, San Francisco, CA 94102. Contact: Mr. George E. McBride. Telephone: (415)-557-4215. Funds Awarded: \$425,000. Total Project Cost: \$1,289,474. To support development of a comprehensive city and county information system, building on the San Francisco Library's on-line information and document retrieval platform. The project will deliver social services, including health care, culture, and education, and will include the human services cluster of City departments, including Recreation and Parks, Public Health, the Unified School District, Public Housing, and the Mayor's Office of Children, Youth, and Families. The transit system is also a partner in this project, along with Pacific Bell, the San Francisco Arts Commission, and Citywatch 54, the city's cable channel. Funding is requested for workstations, software, a router, frame relay telecommunications links, and personnel.

File No. 06-40-94017 Hispanic Community Fund of the Bay Area, 2601 Mission Street, Suite 708, San Francisco, CA 94110. Contact: Mr. Jose Montes de Oca. Telephone: (415)-550-0785. Funds Awarded: \$450,000. Total Project Cost: \$1,124,557. LatinoNet, a project of the Hispanic Community Fund of the Bay Area, will use an established online service provider, America Online, to demonstrate a model for building a national grassroots information system using traditionally disenfranchised nonprofit agencies throughout the United States (that provide an array of human services) as producers as well as consumers of information. In addition to expanding LatinoNet's audience, the project will establish a network of regional field representatives, who will work with Latino organizations in ten communities to facilitate their participation in LatinoNet. The project will serve communities of color across the United States.



File No. 06-40-94020 Siskiyou County Office of Education, 609 South Gold Street, Yreka, CA 96097. Contact: Mr. Brian Swagerty. Telephone: (916)-842-8412. Funds Awarded: \$120,000. Total Project Cost: \$359,735. The Siskiyou County Office of Education in Yreka, California, will extend their present network service to the 29 area school districts. This process will begin with the creation of SISnet, a TCP/IP connection to each school in the system. Pacific Bell will contribute 46 ISDN lines for this effort. The second step will be a connection to the California State University network (CSUnet) for full Internet access. Upon completion, the network will provide Internet, audio-visual, library, e-mail, health and business support services to this predominantly rural area.



File No. 06-40-94025 Hueneme School District, 205 North Ventura Road, Port Hueneme, CA 93041. Contact: Dr. Ronald C. Rescigno, Ed.. Telephone: (805)-488-3588. Funds Awarded: \$60,000. Total Project Cost: \$445,759. The Hueneme School District of Port Hueneme, California, will act as the hub connection for three community schools who will participate in a national high quality video distribution test. The system demonstration includes three components: distance instruction/teleconferencing, video on demand and delivery of interactive multimedia courses. The project will test the use of fractal compression technology to deliver high quality interactive video signals over long distance using existing low band-width (ISDN) telecommunications infrastructure, supplied by MCI. The other school districts participating in this test are Savannah-Chathan School District in Savannah, Georgia and the Berryessa Union School District in San Jose, California.

File No. 06-40-94026 H.O.P.E. Unit Foundation, 16161 Ventura Blvd, Suite 597, Encino, CA 91436. Contact: Mr. Phillip S. Mittelman. Telephone: (310)-476-4307. Funds Awarded: \$95,015. Total Project Cost: \$190,030. The H.O.P.E. Unit Foundation proposes to establish a frame relay based network that will allow local call access to the L.A. Free-Net from all parts of Los Angeles County. Local call access is particularly important to promote use by schools and low income users. The LA Free-Net provides extensive community service and special interest group bulletin boards, access to local, state, and federal legislative information, special K-12 interactive education programs, medical bulletin boards, electronic mail (including Internet mail), and other services. The LA Free-Net can be accessed from a computer with a modem for an annual fee of \$10.

File No. 06-40-94075 Korean Youth and Community Center, 680 S. Wilton Place, Los Angeles, CA 90005. Contact: Mr. Bong Hwan Kim. Telephone: (213)-365-7400. Funds Awarded: \$100,000. Total Project Cost: \$200,000. To support the NII component of the Families and Neighborhoods Initiative, a project to develop inter-agency training programs appropriate to the human resources and organizational development needs of community based organizations serving low-income immigrant Asian-Pacific communities. A high-speed digital network will be established to link the Chinatown Service Center, the Korean Youth and Community Center, Visual Communications, the Search to Involve Pilipino Americans, and the UCLA Asian American Studies Center. A steering committee will be formed to coordinate program planning and UCLA Field Studies/Community Internships and Independent Field Studies Projects, and an Asian American Community Fellows Program will be created. This project builds upon a grant from CalREN and the KYCC's new multimedia computer center.



File No. 06-40-94080 PUENTE Learning Center, 501 South Boyle Avenue, Los Angeles, CA 90033. Contact: Mr. Paul Millman. Telephone: (213)-780-8900. Funds Awarded: \$161,364. Total Project Cost: \$322,728. PUENTE is a non-profit, non-sectarian educational institution with campuses in East and South Central Los Angeles which provides free, need-specific instruction to more than 1,400 economically challenged, ethnically diverse children, teens and adults. PUENTE seeks funding to provide an audio, video, and data link between the East and South Central LA locations and to establish distance learning labs using a dedicated T-1 facility.

File No. 06-50-94030 Urban Strategies Council, 672 13th Street, Oakland, CA 94612. Contact: Mr. Ed Ferran. Telephone: (510)-893-2404. Funds Awarded: \$100,000. Total Project Cost: \$200,000. The Urban Strategies Council proposes the National Community Building Network, an alliance of locally driven urban initiatives and national and local foundations in over 21 cities working to reduce poverty and create social and economic opportunity through community building strategies. Funds are requested to implement a needs assessment process designed to forge links between community building expertise and technological expertise. Initially, the project will be implemented in five cities.

DC



File No. 11-40-94005 Foundation for Educational Innovation, 2213 M Street, NW, Suite 300, Washington, DC 20037. Contact: Mr. Archie Prioleau. Telephone: (301)-499-1570. Funds Awarded: \$450,000. Total Project Cost: \$1,193,621. This project will support a new learning system, the "Virtual Visit," and Technical Learning Centers, using existing two-way video and teleconferencing technology as a basis for establishing communication environments providing electronic and interactive links to content found in America's museums and galleries; develop a pilot network in the DC public school system; and ensure the participation of minority and at-risk students in the project. Howard University will provide teacher training; program evaluation methodologies will be developed based on Department of Energy models. Installation locations include Garrison Elementary School, Coolidge High School, the Patricia Harris School, and the Henry Gregory Family Life Center. Each school will be linked to the system via the Internet through interactive multimedia workstations. Museums in New York, the District of Columbia, and Australia will participate.

File No. 11-40-94031 Marshall Heights Community Development Organization, 3917 Minnesota Avenue, NE, Washington, DC 20019. Contact: Mr. William Peebles. Telephone: (202)-396-3832. Funds Awarded: \$675,000. Total Project Cost: \$1,500,000. The LifeSkills Project will test the effectiveness of a telecommunications-supported electronic network that integrates a wide range of employment, training, health and human services to bring 50 low income, disadvantaged families from a state of poverty and dependency to a state of social and economic self-sufficiency. LifeSkills uses a network of multimedia workstations. The innovation of the project is its organization and service delivery, rather than its use of advanced hardware.

File No. 11-50-94019 Soundprint Media Center, Inc., 4000 Brandywine Street, NW, Suite 620, Washington, DC 20016. Contact: Ms. Moira K. Rankin. Telephone: (202)-885-1285. Funds Awarded: \$109,873. Total Project Cost: \$219,746. To support planning of a nationwide information network enabling public radio stations, producers, and listeners to access the NII. The plan will establish a working laboratory, the SOUNDPRINT Multi-Media Lab, that will work with partners from domestic and international radio, community information networks, interactive information services, libraries, and math and science centers, who will test the feasibility of providing electronic access for a nationwide system of audio and text-based information and resources. The plan will create a spoke and hub arrangement, linking Gopher sites of local, regional, and national stations and information providers; plan ways to distribute radio programs via the Internet; create a clear public policy on rights and royalties; and develop training programs and delivery methods that will address skill issues raised in other components of the project.

FL



File No. 12-40-94090 School District of Indian River County, 1990 25th Street, Vero Beach, FL 32960. Contact: Ms. Linda Kern. Telephone: (407)-564-3125. Funds Awarded: \$185,000. Total Project Cost: \$477,785. The School District of Indian River County in Vero Beach, Florida, will expand the Indian River Educational Network (IRENE). IRENE presently operates as a school based bulletin board service with limited Internet access. The project will upgrade IRENE to a full community Internet gateway, using the Florida Information Resource Network (FIRN). As a result of this upgrade, the community and school system will have full access to e-mail and other Internet services.

File No. 17-60-94086 Center for Neighborhood Technology, 2125 West North Avenue, Chicago, IL 60647. Contact: Mr. Michael Freedberg. Telephone: (312)-278-4800. Funds Awarded: \$415,497. Total Project Cost: \$902,651. To develop expertise, techniques and software for disseminating and using government information at the grassroots community level. Two organizations, the Center for Neighborhood Technology and Roosevelt University's Institute for Metropolitan Affairs, propose to work with a consortium of civic, grassroots and community organizations to design and test an innovative, accessible community information system for the Chicago metropolitan area. Data from the Home Mortgage Disclosure Act will be linked with an existing local computer network, the Neighborhood Early Warning System, as the platform for implementing the plan. The information will help eliminate discriminatory lending practices and promote government data sets, including health, education, transportation, environment, social services and economic development.

KS

File No. 20-50-94041 Kansas State Corporation Commission, 1500 Southwest Arrowhead Road, Topeka, KS 66614. Contact: Mr. Don Low. Telephone: (913)-271-3220. Funds Awarded: \$190,731. Total Project Cost: \$381,463. The Kansas State Corporation Commission (KCC) will develop a comprehensive, statewide telecommunications infrastructure plan that addresses the needs of business, health care, education, government, and the public. KCC will identify applications of special importance to Kansas and will set priorities for their development. Special needs of the many rural parts of the state, and of the metropolitan areas, will be addressed. Cooperation and coordination between public institutions and the private sector will be encouraged. KCC will define methods for user training in new services and applications. Finally, the likely impact on job retention and creation will be evaluated.

KY

 File No. 21-50-94072 Jefferson County Public Schools, 502 Wood Road, Louisville, KY 40222. Contact: Ms. Joyce Paul. Telephone: (502)-473-3290. Funds Awarded: \$10,695. Total Project Cost: \$58,893. Jefferson County Public School District will design the infrastructure necessary to link its 96,000 students, 11,000 employees and 170 sites to the larger national information infrastructure. The plan will also take into consideration the development of the Kentucky Education Technology System (KETS), a major statewide initiative to establish high performance linkages among educational institutions in the state.

LA

File No. 22-40-94079 Loyola University, 6363 St. Charles Avenue, New Orleans, LA 70118. Contact: Dr. Gary Talarchek. Telephone: (504)-865-2196. Funds Awarded: \$289,214. Total Project Cost: \$601,256. Loyola University of New Orleans (LUNO) proposes a demonstration project using video teleconferencing and electronic mail to extend education and University services to underserved areas in Louisiana. The project will serve LUNO distance students, literacy providers, faculty and registered nurses. The project will begin in October 1994 and continue until April 1996. LUNO is in partnership with the Louisiana Literacy foundation.

MA

File No. 25-40-94044 Massachusetts Executive Office of Education, One Ashburton Place, Boston, MA 02108. Contact: Mr. Joseph Schabhetl. Telephone: (617)-621-0290. Funds Awarded: \$399,910. Total Project Cost: \$799,820. The Massachusetts Executive Office of Education, Boston, will act as the lead agency in the development of a state-wide, integrated, interactive voice and data network called the Massachusetts Information Infrastructure (MI). Other partners include The Massachusetts Education Computer Network (MECN), MCET, and the Massachusetts Board of Library Commissions. The proposal will connect 20 of a projected 352 sites. The state plan targets K-12 schools, higher education institutions, libraries, local government, health services and community organizations.

MD

★ File No. 24-40-94027 University of Maryland, Lee Building, Room 2100, College Park, MD 20742. Contact: Ms. Jennifer Fajman. Telephone: (301)-405-6083. Funds Awarded: \$244,496. Total Project Cost: \$511,166. The University of Maryland, in coordination with K-12 science and ecology programs, proposes a demonstration Internet Resource Center (IRC), K-12 access points, and linkage to the Chesapeake Bay Observing System (CBOS) for real-time science and ecology information. This project will serve K-12 institutions, their teachers and students in Maryland. This project is a joint effort of several University of Maryland organizations, the Maryland State Department of Education, and other public and private institutions in Maryland.

File No. 24-40-94043 Museum Computer Network, 8720 Georgia Avenue, Suite 501, Silver Spring, MD 20910. Contact: Mr. Robert Leming. Telephone: (215)-684-7741. Funds Awarded: \$158,150. Total Project Cost: \$316,300. To support Cultural Heritage Information Online (CHIO), a project of the Museum Information Network and members of the Consortium for Computer Interchange of Museum Information, to create a multimedia resource about folk art collections. The project will create a database of 5,000 multimedia folk art records, available to Internet users; create standards and formats for representing information such as text, images, and publications and create a model for other information providers. Multimedia records would be selected from 4 to 6 participating institutions; a critical component is the Standard Generalized Markup Language (SGML). Partners include the Canadian Heritage Information Network, the Getty Art History Information Program, and the Research Libraries Information Network.

ME

File No. 23-50-94063 University of Maine System, 107 Maine Avenue, Bangor, ME 04401. Contact: Dr. George Connick. Telephone: (207)-621-3402. Funds Awarded: \$112,704. Total Project Cost: \$225,846. To develop a comprehensive telecommunications plan for Maine that addresses the state's long term need for an information infrastructure linking it to national and global networks. University of Maine System, Maine Public Broadcasting Corporation and a consortium of public, private, and nonprofit organizations including NYNEX, Central Maine Power, cable companies, independent community networks, etc.) will participate in the planning effort. The entire population of the state is targeted, particularly rural areas. Ultimately the plan will enhance delivery of health and social services, improve access to libraries and other information bases, and broaden citizen participation in public policy development.

MI

File No. 26-40-94051 Michigan Association for Local Public Health, 215 N. Walnut Street, Lansing, MI 48933. Contact: Mr. Jeffrey S. Weihs. Telephone: (517)-485-0660. Funds Awarded: \$113,438. Total Project Cost: \$226,876. The Michigan Association for Local Public Health, in a partnership with the Michigan Department of Public Health, proposes to create a Michigan Public Health Information Network by integrating multiple statewide and local networks. The project would connect scattered local area networks using the existing statewide wide area network (WAN), update and move the current statewide electronic conferencing system to the statewide WAN and integrate it with new electronic mail and file transfer facilities, and maintain and expand existing methods of access to public health data systems by providing a link to the statewide educational network and by providing users with access to the Internet and various Internet services.

File No. 26-40-94054 Great Lakes Commission, 400 Fourth Street, Ann Arbor, MI 48103-4816. Contact: Ms. Carol A. Ratza. Telephone: (313)-665-9135. Funds Awarded: \$336,930. Total Project Cost: \$674,081. The Great Lakes Information Network builds upon Internet, NSFNET, CINCnet, and startup funds from Ameritech, to provide participants in the Great Lakes binational community with immediate access to information on business and industry statistics, socioeconomic data, regulatory and policy developments, environmental research, air emissions, human health data, lake levels, and the like. The project will extend access, increase the knowledge base of the region, improve training and add new data services to enhance the economy and the environment.

File No. 26-40-94062 Regents of the University of Michigan, Division, Research Development, 3003 S. State Street, Room 1066, Ann Arbor, MI 48109-1274. Contact: Dr. Michael McGill. Telephone: (313)-764-4262. Funds Awarded: \$225,085. Total Project Cost: \$488,788. The University of Michigan Medical Center (UMMC) proposes to demonstrate remote physician collaboration using Internet based technology. UMMC proposes to develop and demonstrate a starter package of Internet tools that could be used as the technological underpinning of a Community Health Information Network (CHIN). Components for the CHIN include encrypted electronic mail, an interface that converts mainframe-stored discharge summaries to electronic mail messages, and a Mosaic-based server that supports Electronic Document Interchange using the ANSI X.12 standard and Health Level 7 exchanges of patient information. As they are developed, these components would be tested in the field with UMMC's network of referring physicians.

MN

★ File No. 27-40-94082 University of Minnesota, 1100 Washington Avenue, South, Suite 201, Minneapolis, MN 55415-1226. Contact: Mr. Donald Riley. Telephone: (612)-626-9816. Funds Awarded: \$425,000. Total Project Cost: \$1,495,350. The University of Minnesota, in collaboration with the Department of Administration, seeks funding to extend and enhance the existing infrastructure supported by the Administration's MNet to provide a broader constituency with the resources and capabilities of the Internet and to accelerate the development of on-line information resources in a number of sectors. The project, Access Minnesota, will establish community access centers in 60 counties with direct access to Internet and eventually to all 87 counties. Ten K-12 pilot schools will also connect to the MNet system. Minnesota Public Radio and KTCA/KTCI will be offering dial-in access.

MO



File No. 29-40-94004 St. Joseph School District, 925 Felix Street, St. Joseph, MO 64501. Contact: Mr. Rick Hartigan. Telephone: (816)-232-9753. Funds Awarded: \$262,250. Total Project Cost: \$5,447,250. The St. Joseph Missouri School District will act as the lead agency in the development of seamless, multi-user, fiber optic, metropolitan network. Through a partnership with the local cable company, all 30 public school sites in Buchanan County will be connected to local and national resources via lines dedicated for educational use. This single effort by the local school board will connect all educational institutions to the larger network and will create local area networks (LAN) connecting each classroom in the system.

File No. 29-40-94028 Saint Louis University, 221 N. Grand Blvd., Saint Louis, MO 63103. Contact: Ms. Feifei Wei, Ph.. Telephone: (314)-658-8102. Funds Awarded: \$136,966. Total Project Cost: \$273,933. The St. Louis University School of Public Health, in partnership with the Missouri Department of Health Bureau of Immunization, and the St. Louis City and County Health Departments, proposes to develop the St. Louis Integrated Immunization Information System (SLIIS) as part of a five-year plan to raise and maintain the immunization rates of children under age two. St. Louis would adopt the Missouri Immunization Information System with modifications tailoring it to local needs. The project objectives for the first year include providing all public health care providers of immunization to children under age two in St. Louis with on-line real-time access to immunization information and raising the immunization rate to 45% (from 38%).

File No. 29-40-94048 City of St. Peters, One St. Peters Centre Blvd., P.O. Box 9, St. Peters, MO 63376. Contact: Ms. Cathy Gillies. Telephone: (314)-447-4440. Funds Awarded: \$97,862. Total Project Cost: \$195,724. The City of St. Peters, Missouri, will improve access to City government and public information by linking computer and telecommunications systems in the City of St. Peters with the St. Charles City-County Library District, Ft. Zumwalt Public School District, and the University of Missouri at Columbia in order to provide Internet access, city e-mail, and an interactive electronic community bulletin board for public use.

File No. 29-40-94083 Grace Hill Neighborhood Services, 2600 Hadley Street, St. Louis, MO 63106. Contact: Mr. Richard Gram. Telephone: (314)-539-9510. Funds Awarded: \$600,000. Total Project Cost: \$1,201,211. Grace Hill Neighborhood Services proposes a telecommunications network and a card based information system in five low income communities to allow end users to manage and move community information, personal information, and personal finances. This will assist facilitation of neighborhood based economic development and the coordination of social and health services. Proposal requests 50 PC based, networked, MORE Workstations, to be installed in agencies and public sites for 7-day a week, 24-hours a day service.

File No. 29-60-94059 Kansas City Area Development Council, 911 Main, 2600 Commerce Tower, Kansas City, MO 64105. Contact: Mr. Wayne Little. Telephone: (816)-221-2121. Funds Awarded: \$250,000. Total Project Cost: \$746,600. To support design, testing, and documentation of a saleable planning model for an advanced information infrastructure for the Kansas City region. During the planning process, the KCADC will establish formal partnerships for collaborative planning and document the process. Formal steps in the process include design of all aspects of a planning framework; development of policies and procedures for the planning organization; definition of critical factors for preparation and implementation; design of training materials; identification of interactions among the functional groups; profiling the required human resources; outlining necessary inputs and expected outputs; and testing of the planning framework. Partners in this process include Silicon Prairie Technology Association; Southwestern Bell; University of Missouri; Greater Kansas City Chamber of Commerce; Kansas City Public Library; and the University of Kansas.

MS

File No. 28-40-94068 Tri-State Education Initiative Consortium, Highway 72 West, Iuka, MS 38852-0508. Contact: Dr. John Arnold. Telephone: (601)-423-9071. Funds Awarded: \$600,000. Total Project Cost: \$2,400,000. The Tri-State Education Initiative Consortium will develop a project to improve the information infrastructure in Alabama, Mississippi, and Tennessee and to expand infrastructure improvements in Tishomingo County, MS. A key element of the project is the development of a wide area network known as the WEB, which will be used as a collaborative communications vehicle for the region's stakeholders (students, parents, educators, community representatives). The WEB will promote collaboration in support of four "frameworks" developed as part of the NASA-sponsored Tri-State Education Initiative. The frameworks are: Leadership, Applied Lifelong Learning and Training, Physical Resources, and Socio-Economic Opportunity. The network will be a "star" type network. The project will serve a population of approximately 550,000.

MT

★ File No. 30-40-94001 Hall Elementary School District No. 8, No. 8 Farm to Market Road, Hall, MT 59837-0220. Contact: Ms. Rhonda R. Luoma. Telephone: (406)-288-3349. Funds Awarded: \$3,000. Total Project Cost: \$6,881. Hall Elementary School District Number 8, in rural southwest Montana, will install the town's first Internet connection in their school building. This connection will provide the 25 students and 95 residents of the town with access to Montana statewide information services as well as national resources. Connection facilities will be placed in the two room school building and will be available to all residents.

NC

File No. 37-40-94022 Public Library of Charlotte and Mecklenburg, 310 N. Tryon Street, Charlotte, NC 28202. Contact: Ms. Pat Ryckman. Telephone: (704)-336-6235. Funds Awarded: \$450,000. Total Project Cost: \$1,240,000. To support the Charlotte's Web network in the Charlotte-Gastonia-Rock Hill (SC) area, providing citizens and school children with access to information resources. Coalition members include the Library of Charlotte and Mecklenburg County; Charlotte-Mecklenburg Schools; Central Piedmont Community College; WTVI-TV; the University of North Carolina; Southern Bell; Time-Warner Cable; and Vision Cable. Initially, 114 public access terminals will be located in libraries, neighborhood and senior centers, shelters, health care facilities, classrooms, and school libraries. Extensive computer literacy training will be provided, and the system will be linked to the North Carolina Information Highway, a fiber network connecting rural and urban areas with broadband data and video. The system will employ switched multi-megabit data service (SMDS), Unix servers, VSAT technology, and expanded interactive video using ATM.

File No. 37-40-94084 Office of the Governor, 116 W. Jones Street, Room 5050. Raleigh, NC 27603-8003. Contact: Ms. Sharon Morgan, Ph.. Telephone: (919)-733-4131. Funds Awarded: \$550,000. Total Project Cost: \$2,393,140. The State of North Carolina proposes to link emergency departments at each of the State's four medical centers affiliated with medical schools (Bowman Gray, Duke University, East Carolina University, and the University of North Carolina Schools of Medicine) with five remote site hospital emergency departments, including one military base hospital emergency department, to provide teleconsultations (including general trauma consults, as well as teleradiology consults, such as, x-rays, and CT scans) during emergency situations. The project will utilize the broadband, ATM/SONET-based North Carolina Information Highway to connect the sites.

NJ

File No. 34-40-94049 Newark Board of Education, 2 Cedar Street, Essex, NJ 07102. Contact: Ms. Pamela Morgan. Telephone: (201)-733-8290. Funds Awarded: \$106,950. Total Project Cost: \$147,370. The Newark Board of Education, together with the New Community Corporation, proposes to develop a networking program that would put Newark, New Jersey citizens in touch with health care professionals, social service agencies, information services, and their neighbors. Individuals will access a community database with two areas: one for health-related community projects, where the participants will have access to information related to their projects and health topics, and one for neighborhood related communication, where participants can communicate with each other, sharing history, music, writing, and other information.

File No. 34-40-94069 Newark Public Library, 5 Washington Street, Newark, NJ 07102. Contact: Mr. Paul A. Stellhorn. Telephone: (201)-733-7793. Funds Awarded: \$550,000. Total Project Cost: \$1,429,770. To support the Newark Electronic Information Infrastructure Demonstration Project, which will purchase and install advanced telecommunications equipment in five locations and provide specialized electronic information and communication resources. The project is designed as a component of Newark's Empowerment Zone plan, and targets 55,213 residents, businesses and entrepreneurs, community-based organizations, and children and students who live, work, or attend school in the 27 Empowerment Zone tracts. Secondary beneficiaries will be the balance of the city's 275,000 residents. The basis of the system is a Hewlett-Packard Model 800G Unix-based mainframe, Dell file servers, a local network operating from a Sun SPARCstation, public access workstations, and a wide area network connecting the Central Library, a branch library, and City Hall to Bell Atlantic's fiber optic ring serving the City of Newark.

NM

File No. 35-60-94074 University of New Mexico, Office of Research Administration, Scholes Hall, Room 102, Albuquerque, NM 87131. Contact: Dr. Rosemary Ann Blanchard. Telephone: (505)-863-7526. Funds Awarded: \$190,789. Total Project Cost: \$466,175. To engage in comprehensive telecommunications infrastructure planning for the McKinley County area within New Mexico and related adjacent communities. Development of a computer telecom network, with particular emphasis on educational uses of the network, although medical providers, governmental entities and economic organizations will also be included. Focus on Native American population (72%) and Hispanic population (13%). The University of New Mexico/Gallup will act as coordinator with broad partnership of educational, health, governmental and community entities.

NV

★ File No. 32-40-94091 Green Valley High School, 460 Arroyo Grande Blvd., Henderson, NV 89014. Contact: Ms. Cynthia Montoya. Telephone: (702)-898-0750. Funds Awarded: \$40,000. Total Project Cost: \$85,800. Green Valley High School in Henderson, Nevada, a suburb of Las Vegas, will install a fiber optic local area network (LAN) in their building to interconnect the library, classrooms and computer laboratories. The LAN will then be connected by the InterAct project to the Internet. The project will provide network access for 3,300 students and 135 professional staff members.

PA

File No. 42-40-94023 Commonwealth of Pennsylvania, 204 Finance Building, Harrisburg, PA 17120. Contact: Mr. Richard M. Walsh. Telephone: (717)-787-5440. Funds Awarded: \$379,302. Total Project Cost: \$762,905. The Commonwealth of Pennsylvania proposes to develop The Keystone State Desktop Medical Conferencing Network (KEYNET) as part of the Pennsylvania Rural Health Telecommunications Network. KEYNET would link physicians in rural/remote areas with resources in urban areas using PC-based multimedia capabilities. These resources would include both consulting physicians and various information sources, such as medical libraries and databases. The project would rely on the use of ISDN telecommunication links and PC-based desktop video equipment. Partners in the project include the Governor's office, the Pennsylvania Department of Health, three tertiary care facilities, a rural hub site, and ten rural physicians from Potter County, Pennsylvania.

★ File No. 42-40-94032 MPC Corporation, University of Pittsburgh, 5000 Forbes Avenue, Pittsburgh, PA 15213. Contact: Mr. Robert D. Carlitz. Telephone: (412)-624-9027. Funds Awarded: \$551,094. Total Project Cost: \$1,102,572. Carnegie Mellon's MPC Corporation proposes further expansion of activities in four schools that are a part of the National Science Foundation's testbeds for school networking - two elementary schools, a middle school, and a high school - with an emphasis on the study of foreign languages. With support from DEC and Tele-Communications, Incorporated, the four schools, a community center, and the Carnegie Library will be connected to the Pittsburgh Supercomputing Center using DEC's ChannelWorks ethernet over CATV technology, which will provide a 10 Mbps connection to the Internet via the center. The project will examine this technology as a potential model for school interconnects in urban settings.

File No. 42-40-94050 Commonwealth of Pennsylvania, Central Management Information Center, 1 Technology Park, Harrisburg, PA 17110. Contact: Mr. Robert G. Fike. Telephone: (717)-772-8046. Funds Awarded: \$125,000. Total Project Cost: \$374,890. The Commonwealth of Pennsylvania proposes a project that would take services out of government buildings and place them more directly into the lifestyles of the people. Information would be provided using multimedia kiosks that employ a simple to use touch-screen interface. Kiosks will be strategically located to disseminate information and services at more convenient times and places to citizens of the Commonwealth. Examples of information to be made available through the kiosk system include application information for the Women, Infants, and Children (WIC) program, job training opportunities for unemployed youths, and access for senior citizens to Department of Aging programs. The kiosks will also support motor vehicle registration and driver's license renewals.

File No. 42-40-94085 Carnegie Institute, 4400 Forbes Avenue, Pittsburgh, PA 15213-4080. Contact: Mr. James King. Telephone: (412)-622-3241. Funds Awarded: \$200,000. Total Project Cost: \$400,000. To support the first phase of NATUREnet, a National Architecture for Telecommunications and a Unified Resource on the Environment. Nine institutions will be linked so that a single query on plants, animals, or ecosystems will simultaneously access a virtual database on environmental topics of individual, regional, national, or international concern. Common capability levels and data uniformity will be achieved using a fiber optic backbone, departmental LANs, a communications server, a DBMS server, local workstations, and adoption of the Smithsonian's RapidMap standards for specimen data entry. This phase of the project will allow access to institutional and Internet accessible text/database records, images, videos, sounds, maps, and will include communications tools such as e-mail and bulletin boards. A T-1 connection and Unix server will be installed at each institution, along with at least one public access workstation.

WA

File No. 53-40-94013 Eastern Washington University, Mail Stop 10, 526 5th Street, Cheney, WA 99004-2431. Contact: Dr. Karen Michaelson. Telephone: (509)-359-6567. Funds Awarded: \$305,634. Total Project Cost: \$617,054. Inland Northwest Community Network will demonstrate a collaborative model of regional (seven) community freenets to serve a medium-sized urban area and contiguous rural counties with sparse population, rugged terrain, and often inclement weather. The model will promote economic development through business advisory services, an enhanced homework line staffed by local colleges and universities, a link to higher education programs, and a civic MUD (multiple user dimension environment), which would enable citizens to work collaboratively to plan civic activities using a virtual environment. Geographically affected by the project are six counties in Eastern Washington and Kootenai County in Idaho.

★ File No. 53-40-94055 Quillayute Valley School District, PO Box 60, 411 S. Spartan Avenue, Forks, WA 98331. Contact: Mr. John O. Jones. Telephone: (206)-374-6262. Funds Awarded: \$139,163. Total Project Cost: \$278,327. Quillayute Valley School District, a rural education system, serving a predominantly Native American population, in Forks, Washington, will build a system-wide, voice, data and video, instructional network. The TCP-IP based network will be designed to provide school district, social service agencies and the community with access to WEdNet, (the Washington Education Network) and Internet. The service will also connect local tribal facilities to national network services.

WI

File No. 55-50-94087 State of Wisconsin-Department of Administration, 101 East Wilson, 8th Floor, Madison, WI 53702. Contact: Mr. Paul Nelson. Telephone: (608)-266-5667. Funds Awarded: \$331,990. Total Project Cost: \$745,575. The State of Wisconsin will conduct a planning project to integrate state and community efforts toward the goal of extending an advanced telecommunications infrastructure to the "last mile." The project will include a needs assessment, outreach, education, and organizing efforts through state/community development teams and will result in: 1) a comprehensive set of replicable models for local and regional infrastructure development and connectivity; 2) state-level network infrastructure recommendations; 3) shared tools for the delivery of information to end users that ensures friendly interface and accessibility; and 4) a framework of priorities and a timetable for development.

WV

File No. 54-40-94053 West Virginia University Research Corporation, , 617 N. Spruce Street, P.O. Box 6845, Morgantown, WV 26506-6845. Contact: Ms. Mary Jane Buckland. Telephone: (304)-293-3998. Funds Awarded: \$75,049. Total Project Cost: \$151,030. The College of Human Resources and Education at West Virginia University proposes a demonstration project to establish an infrastructure to support the reformation of education and teacher preparation in West Virginia. The project will complete a computer network infrastructure within the College of Human Resources, establish an Internet server offering information on professional development for teachers, and provide the Professional Development Schools with access to the Internet.

NY



File No. 36-40-94057 Trustees of Columbia University in the City of New York, Room 405, Low Memorial Library, 116th Street and Broadway, New York, NY 10027. Contact: Ms. Beth H. Israel. Telephone: (212)-854-6851. Funds Awarded: \$450,000. Total Project Cost: \$1,101,919. The Harlem Environmental Access Project extends the NII to connect the information resources and expertise of Columbia University and the Environmental Defense Fund with students and teachers in the Harlem Economic Empowerment Zone. Through the extension of high-speed networks and graphical interfaces for teaching, environmental resources will be provided to teachers and students. The project will include purchase and installation of new equipment in six schools, provision of curricular material and support, and necessary elements for connection to Columbia.

File No. 36-40-94065 Trustees of Columbia University, Office of Grants and Contracts, 630 West 168th Street, New York, NY 10032. Contact: Dr. George Hripesak. Telephone: (212)-305-5712. Funds Awarded: \$733,424. Total Project Cost: \$2,576,521. Columbia-Presbyterian Medical Center, the New York City Department of Health, and the Visiting Nurse Services of New York City propose to collaborate to develop and demonstrate an information infrastructure to provide coordinated care to tuberculosis (TB) patients in the home, in a doctor's office, and in the hospital. The project will use automated decision-support systems, networks, interactive wireless hand-held computers, and natural language processing technology to coordinate the many providers of care for TB patients, ensure that appropriate TB protocols are followed, develop an infrastructure that could be used in the treatment of other diseases, and demonstrate how electronic medical records can meet high standards of privacy and confidentiality.

File No. 36-40-94066 United Neighborhood Houses of New York, Inc., 475 Park Avenue South, 6th Floor, New York, NY 10016. Contact: Dr. Maxine Rockoff. Telephone: (212)-776-3434. Funds Awarded: \$697,936. Total Project Cost: \$1,396,886. United Neighborhood Houses of New York plans to install a telecommunications and information infrastructure in 5 pilot settlement houses in New York City to enable: (1) more efficient coordination with government agencies that fund community-based social services; and (2) provide Internet access for community residents in poverty-stricken neighborhoods. Settlement houses provide social services while also offering enrichment activities (recreational, cultural, and educational) focused on neighborhood strengths. Typically, computerization in settlement houses is an ad hoc, unintegrated affair, driven primarily by the uncoordinated requirement of government programs. The five-year UNH Information Technology Initiative will undertake to introduce information technology to improve the service delivery process and design reports necessary for accountability.

File No. 36-40-94070 City University of New York, 555 West 57th Street, 16th Floor, New York, NY 10019. Contact: Ms. Marsha Ra. Telephone: (212)-541-0369. Funds Awarded: \$275,000. Total Project Cost: \$559,150. The City University of New York, in partnership with the New York Academy of Medicine, the New York Metropolitan Research and Reference Library Agency's Hospital Library Services Program, and the New York Public Library, proposes to work with local voluntary health agencies, support groups, and commercial vendors to demonstrate a consumer health information network that will serve the residents of New York City and lower Westchester County, New York. Citizens could access the network from public terminals located in libraries, colleges, hospitals, and other locations. The network will provide access to databases on breast cancer, AIDS, and other diseases. The network would also provide access to a directory of community services, a bulletin board for public health announcements, a health and drug information library, and other services in both English and Spanish. The network will be Internet-based.

File No. 36-50-94012 New York State Education Department, Room 5B44, Cultural Education Center, Albany, NY 12230. Contact: Mr. Charles Devoe. Telephone: (518)-474-5091. Funds Awarded: \$250,000. Total Project Cost: \$707,185. The New York State Education Department's Office of Telecommunications Policy Analysis and Development has been given the responsibility to develop a comprehensive state-wide networking plan. The project will consider interconnection and interoperation of existing networks, the development of new systems, legal and regulatory considerations, and issues of public/private partnerships in the development of a single state network. Partners in this project include the New York State Department of Economic Development, The State University of New York, City University of New York, and New York State Boards of Cooperative Educational Services (BOCES).



File No. 36-50-94021 Steuben-Allegany BOCES, 6666 Babcock Hollow Road, Bath, NY 14810-9796. Contact: Mr. Rene L. Bouchard. Telephone: (607)-776-7631. Funds Awarded: \$48,500. Total Project Cost: \$97,000. The Steuben-Allegany Board of Cooperative Education Services (BOCES) is requesting funds to support a Steuben County telecommunications plan. The BOCES plan will include the four public school districts, area hospitals, emergency medical services, public telephone companies, cable companies, local businesses and industry. The coalition will provide support for the establishment of interoperable countywide telecommunication infrastructure.

File No. 36-50-94035 Cornell University Office of Sponsored Programs, 120 Day Hall, P.O. Box DH, Ithaca, NY 14853-2791. Contact: Ms. Denise J. Clark. Telephone: (607)-255-5014. Funds Awarded: \$114,676. Total Project Cost: \$229,352. To support planning for the Child Abuse Prevention Network, using a market research and analysis process to plan a national computer network for a diverse community. Currently, no more than 200 child abuse prevention professionals are effectively networked. In addition, commercial networks are either far too expensive or fall short of information salience. In order to address these problems, the Cornell University Family Life and Development Center would develop a plan to interconnect GTE's Educational Services for the Human Services InterNetwork; HandsNet; America Online's Parent Information Network and Child Abuse Forum; and IGC/APC's HumanServe (which in turn interconnects Internet Listservs, the UseNet Newsgroup environment, and IGC's conferences on children and child abuse). More than 200,000 persons, programs, and agencies with child abuse prevention and intervention components will be extensively surveyed.

File No. 36-50-94036 Planned Parenthood Federation of America, Inc., 810 Seventh Avenue, 12th Floor, New York, NY 10019. Contact: Mr. Timothy Lannan. Telephone: (212)-541-7800. Funds Awarded: \$294,390. Total Project Cost: \$594,994. Planned Parenthood Federation of America (PPFA) proposes a one-year planning project to design the prototype of a nationwide, on-line information system to collect and exchange data on reproductive health care. After testing the system in selected Planned Parenthood sites (subsequent to the grant year), it would be implemented in all 164 PPFA affiliates, which manage 919 clinics. Primary data and information on reproductive issues and health care collected in Planned Parenthood clinics across the nation then will be made available on-line to health care researchers, health care providers, policy makers, and federal and state health care agencies.

OH

File No. 39-40-94037 National Public Telecomputing Network, 34555 Chagrin Blvd., Moreland Hills, OH 44022. Contact: Mr. Thomas M. Grunder. Telephone: (216)-247-5800. Funds Awarded: \$447,955. Total Project Cost: \$895,910. The National Public Telecomputing Network (NPTN) will act as the lead organization in the development of a series of model demonstration networks which will provide community computing services (Free-Nets) to 20 rural communities. Though collaboration with hardware and software developers, NPTN will move their "Rural Information Network" from successful prototype to national demonstration in twenty communities.

THE WHITE HOUSE
WASHINGTON

November 2, 1994

MEMORANDUM FOR THE PRESIDENT

FROM: Bill Galston
Paul Dimond
Mike Schmidt

THROUGH: Leon Panetta
Carol Rasco
Bob Rubin

SUBJECT: Background on The Administration's Efforts to Promote
Learning Technologies

In preparation for Thursday's Learning Technology event with Governor Cuomo, this memorandum provides the background for a major new initiative promoting learning technologies for which we secured authorization and funding as a part of ESEA. We have attached a two-page summary that describes the Administration's comprehensive program for unleashing the power of new learning tools to achieve Goals 2000.

BACKGROUND

The DPC-NEC Interagency Working Group that you created on Education, Training and Reemployment focused on learning technologies as one key element of your long-term strategy to equip every American with the skills needed to compete and win in the new, globally competitive economy. After examining the potential and the problems in this area, we concluded that the nation is on the verge of three major revolutions:

- in telecommunications -- a modern-day land rush between competing telecommunication, cable, wireless, software, and utility companies to connect homes, schools, and businesses to a truly national (if not global) information superhighway
- in multi-media programming -- the interactive presentation of data, images, and sound that can engage students of all ages in active learning -- alone, with parents, with teachers.
- in teaching -- a new understanding that the work of learning is primarily done by the learner, and that the role of teacher is that of a discovery guide rather than a talking head at the front of a classroom of passive students

To take full advantage of these fundamental changes, the Working Group concluded that we should focus our efforts on challenging learning communities -- teachers and students, developers of standards and curriculum, telecommunication and software companies, learning experts, entertainment and game creators, states and local school districts -- to come together to develop the learning content that can enable students of all ages to achieve the high standards envisioned by Goals 2000.

ESEA, Title III -- Technology for Education. Building on the framework for education technology already enacted in Goals 2000, we worked cooperatively with all of the Agencies and the Congress to authorize and to fund such a Technology Learning Challenge ("TLC") in Title III of ESEA. This challenge will be modelled after the successful community and economic Empowerment Zone challenge that you launched last year. In the TLC, the federal investment will help defray the costs of developing engaging learning content and will include 100 4-year grants, with 10 to 15 of these for \$5 million per year and the remainder for \$500,000 per year. In addition, we will make available the full range of substantial expertise in interactive learning already developed in the DoD and Energy labs, NASA, and Defense Department training programs. The matching investment from the diverse partners to the "Technology Learning Empowerment" application will include a commitment to deploy the resulting interactive learning tools in schools and homes throughout their designated learning community. Major players in the private sector, states and school districts, colleges and universities, and representatives of the teachers have already privately expressed their enthusiasm for participating in the TLC.

Subject to your schedule, we plan to announce the TLC on January 11, the anniversary of the date the Vice-President challenged the telecommunications industry to connect every school in America to the information superhighway.

Attachments: Clinton-Gore Administration: Technology and Learning Initiatives
Summary of the Cuomo Education Record
Summary of the Cuomo "Connect New York" Information Superhighway

Clinton-Gore Administration: Technology and Learning Initiatives

Goals 2000: Educate America Act

- . Provides the national framework and support for bottom-up reform of lifelong learning in homes, schools, colleges, and firms to enable every American student and worker to achieve the skills needed to compete and win in the new globally competitive economy.
- . To help every student achieve to world class standards, and to help the country achieve the National Education Goals, the Act authorizes the Department of Education to work cooperatively to assist each State in formulating a strategic plan for the development and deployment of interactive learning tools for use by teachers and students in school and children and parents at home.

National Information Infrastructure

- . Vice-President Gore and Commerce Secretary Brown head the Information Infrastructure Task Force that is working cooperatively with the States and the telecommunications industry to encourage development and deployment of a nation-wide network for interactive, multi-media communication and discovery.
- . In January 1994, the Vice-President challenged the telecommunications industry to work cooperatively with the States to connect every school and classroom by the year 2000. Already baby bells such as NYNEX, cable, wireless, and utility companies are joining with states and localities to begin to make these connections.
- . NASA, NOAA, the Smithsonian, the Library of Congress, and other Federal agencies are making their materials available on the information superhighway.

ESEA: Improving America's Schools Act

- . Authorizes a program to challenge learning communities -- teachers, students, telecommunication companies, curriculum and learning specialists, entertainment and interactive game producers -- to develop and deploy interactive learning content that can play on the information superhighway between schools and homes.
- . Creates an Office of Educational Technology reporting directly to the Secretary of Education to coordinate all federal learning technology programs
- . Authorizes the Secretary of Education to create a national framework, in partnership with the States and the private sector, that will assure the development and deployment of learning technologies to serve all students, teachers and parents

- . Authorizes the Secretary to award grants or contracts to develop a new generation of interactive programming for pre-school children so that they are prepared to learn

Other Federal Learning Technology Initiatives

- . DOD has been in the forefront of developing and using interactive and distance learning technologies to achieve higher skills and retraining. DOD has also launched a major program to integrate technology into their worldwide dependents school system.

- . DOD, NASA, and the Department of Energy are working cooperatively with the Secretary of Education to make their state-of-the-art learning technologies available to the private market and to schools.

- . The Commerce Department, through the Telecommunications and Information Infrastructure Assistance Program, provided \$24 million in grant support in FY 1994 for schools, libraries, museums, and community-based learning centers to deploy interactive communications technology. Programs in New York State received over \$2 million of these grants, including \$500,000 for innovative educational technology-related programs.

THE CUOMO RECORD



EDUCATION

- * Governor Cuomo believes that if we give to schools, they give back. His record of achievement is built on innovation and investment -- creating many new programs while more than doubling state aid to local schools since he took office.
- * The Governor has also led the fight to make sure that the state distributes its \$9 billion in annual aid more fairly.
- * His innovations include: the first Community Schools program in the nation -- a model for making schools the center of community activity -- including 41 schools serving 20,000 students statewide which stay open into the late evening providing those in disadvantaged communities a broad range of services, including youth activities, day care and counseling; the award-winning New York State Mentoring Program which encourages successful adults to work one-on-one with at-risk students -- there are now 3,115 students from 214 schools in the program; the first summer Institutes for Mathematics and Science for exceptional students; and, the first statewide Magnet School program, which now serves more than 70,000 children.
- * As a result of these and other innovations and initiatives, drop-out rates are at an historic low.
- * In higher education, Governor Cuomo has made New York's Tuition Assistance Program the most generous in the nation, helping 300,000 working-class and needy students. New York provides more aid than the next two states combined and our public university tuition is still lower than comparable schools in the Northeast.
- * Placing a premium on high-tech research, New York has invested hundreds of millions in university science and technology projects -- including the creation of 13 Centers for Advanced Technology at schools like Columbia University, Cornell University, Syracuse University and Rensselaer Polytechnic Institute.
- * Since pre-kindergarten education has proven its benefits and cost-effectiveness, the Governor has expanded these programs five-fold since taking office, investing \$47 million this year to serve 20,000 youngsters. Since 1983, available child care slots have more than doubled.
- * Governor Cuomo's future plans include greater innovations. His "21st Century Schools" are a totally new approach to education that would allow selected schools to operate free of most state regulations. This would give local officials and parents much greater control over their schools.
- * The Governor created Liberty Scholarships to provide higher educational opportunity to deserving students starting next year. The program has subsequently been adopted by Congress as a national model.
- * In 1994, the Governor announced his Excelsior Schools initiative to give gifted high school students the opportunity to take advantage of SUNY's existing academic and research facilities.

ONE STATE. ONE FUTURE:
THE CONNECT NEW YORK INFORMATION SUPERHIGHWAY

New York was the first state in the nation to create a digital data communications network. Now, working with NYNEX and SPRINT, we are expanding our New York State Education and Research Network -- called NYSERNet -- into the fastest, most accessible Internet system in the country. Our new Connect New York Information Superhighway will link more than 6,000 schools, 7,000 libraries, small businesses and citizen service offices to virtually limitless resources...across the state and around the globe.

All our students -- no matter where they live, no matter their income -- will be able to use a two-way interactive video system to browse through material from our greatest libraries, museums and research institutions. With this breakthrough, a personal computer in a local school or community center can become a gateway to the likes of the New York Public Library, Cornell University, the Library of Congress and the State Museum.

Living Textbook, another element of Connect New York involving NYNEX, Syracuse University and Columbia Teachers College, encourages high school students and teachers to test the communication networks of the future. Targeted high schools across the state are using an experimental fiber-optic network that performs at dazzling speed to develop and test new interactive multimedia educational applications well beyond even the most sophisticated of today's operating networks. The State and our partners are committed to this pilot project and are encouraging other communications and information technology providers in similar, local pursuits like the Rochester Area Interactive Technology Initiative and New York City's CLASSNet. Our goal: to make sure that students in New York are among the first "drivers" on the information superhighway of the future.

Connect New York will also make the most of our investments in the State's thirteen Centers for Advanced Technology, as well as the Cornell Theory Center, the Northeast Parallel Architecture Center at Syracuse University, and the New York Manufacturing Extension Partnership, linking these organizations directly with New York companies. We'll offer qualified businesses a complete package of Internet services. Employing the collective strength of our regional Technology Development Organizations and the State's Manufacturing Outreach Centers, we will launch a special effort to supply small- and medium-sized businesses across New York with access to strategic business information through the Internet -- putting the latest marketing and product information -- and the opportunity for new jobs -- within easy reach.

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THE WHITE HOUSE

WASHINGTON

November 2, 1994

INTERACTIVE LEARNING TECHNOLOGY EVENT

DATE:	November 3, 1994
LOCATION:	Campus Center S.U.N.Y. at Albany
TIME	10:30 - 11:15
FROM:	Paul Dimond Bill Galston

I. PURPOSE

Governor Cuomo and President will talk with four students in remote locations about how learning technologies and information superhighways can contribute to their learning and lives.

II. BACKGROUND

Governor Cuomo is showcasing his initiative -- "One, State One Future: Connect New York Information Superhighway." Your remarks will praise Governor Cuomo's education and technology initiatives and describe how your Administration is forging a partnership with the States to achieve your lifelong learning agenda, including with respect to learning technologies.

III. PARTICIPANTS

President

Governor Cuomo

H. Patrick Swygert, President of State University of New York at Albany

By Remote, Interactive TV (on large video monitors behind the President):

Marquis Woolford, 8th Grader, Drew Science Magnet School, Buffalo

Xenia Lok, Senior, East High School, Rochester

Joseph Driscoll, Sophomore, Nottingham High School, Syracuse

Wellington Guzman, Manhattan High School for Mathematics and Science,
NYC

IV. PRESS PLAN

Open press

V. SEQUENCE OF EVENTS

- President and Governor Cuomo will enter and sit on stools (with hand-held mikes) in front of two large video monitors (with logo "One State, One Future" alternating with live presentations by students from remote locations)
- President Swygert will introduce Governor Cuomo
- Governor Cuomo will make brief remarks and introduce the President
- President will make brief remarks and introduce students
- In order, Marquis Woolford, Xenia Lok, Joseph Driscoll, and Wellington Guzman will offer a demonstration or make a testimonial
- President asks one question of one of students
- Governor Cuomo asks one question of one student
- President and Governor Cuomo converse on potential of learning technologies based on student demonstration and stories
- President Swygert close by thanking students, Governor, and President

VI. REMARKS

Talking Points for Opening remarks, summary of student presentations and possible questions to students attached

(Relevant background summaries of learning technology initiatives of Clinton-Gore Administration and Governor Cuomo are also attached.)

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**ONE STATE. ONE FUTURE.
EXEMPLARLY STUDENTS PARTICIPATING IN CONNECT NEW YORK.**

1. Buffalo Demonstration:

This demonstration showcases how we are using the latest in information and communication technology -- computers, multimedia and the global web of information linkages known as the Internet -- to break beyond the walls of the school building and the library and move our students into the 21st century.

Vicki Zimmer, the computer resource teacher at the Dr. Charles R. Drew Science Magnet school, will join and introduce Marquis Woolford, an African American 8th grader, who will demonstrate how learning technology enabled him to accomplish class assignments on geography and civics.

Marquis became interested in volcanos because of the way the eruption of Mt. Pinituvo ("Pin-a-TOO-vo") in New Guinea affected the environment. For his geography assignment, Marquis tapped into the resources of Michigan Tech University via the Internet and found computer-generated images captured by the "Dante" probe of the inside of a volcano. Growing more curious about the underlying cause of volcanic activity, Marquis was also able to learn about plate tectonics from Grolier Multimedia Encyclopedia with the help of networked computer resources and CD-ROM.

For his Participation in Government class, Marquis accessed the Iroquois Constitution electronically from the Heidelberg Library. And in French class, Marquis learned all about French culture during the time of Louis XV.

Marquis' demonstration will enable us to see these images, too via video.

Marquis will be accompanied by 30 students from Lafayette High School (four of whom will be alongside Marquis during the demonstration -- none have a speaking role). These students participate in a program called Project CONNECT -- a "distance learning" initiative that enables students at disparate schools to take advantage of a variety of course offerings not otherwise available.

2. Rochester:

Xenia ("ZEE-knee-a") Lok ("lock") is a 16 year-old Chinese-American senior at East High. Xenia ranks fourth in her class of 300 and has participated in the Center for Talented Youth at Johns Hopkins University. [note: Mother deceased]

East High is part of the Rochester Area Interactive Telecommunications Network, which links select schools in the city of Rochester and the surrounding suburbs with the State University

of New York at Brockport, the Rochester Institute of Technology and NYSNERNet (NYS' especially advanced Internet connection).

Xenia will talk about how technology has changed her own educational experience...converting lessons from the blackboard to the computer monitor; from the library to the Internet. She will talk about the business-education partnership so central to what she has experienced in Rochester's program. And, she will describe some of the new programming made possible...the opportunity to learn things from Swahili to sign language.

Xenia will also touch specifically on how the technological interconnections she and her fellow students have used through the educational program have improved their own sense of interconnectedness...breaking down barriers of geography, race, urban/suburbanism...and how much that has helped her in her Contemporary Issues course and her own career plans.

3. Syracuse:

Joseph Driscoll is a 15 year-old sophomore at Notingham High School.

Joseph is the news editor for the school paper and uses a personal computer in the school library for research (Internet connection) and for composing his stories for the school paper and for journalism class.

He is particularly excited about a new application they have developed on their computer that permits the school paper to be translated into additional languages. There is a sizable contingent of Vietnamese students in Joseph's school -- and this new ability to use technology to translate the school paper automatically into Vietnamese means that he is able to reach more readers...and have them reach back to him as well.

Joseph will also share the story of a fellow student -- Mecca Marsh -- who has used her own computer to communicate regularly with a new friend in China, a friendship literally made electronically. Electronic mail has enabled their communications to be cross-translated automatically...opening up whole new worlds.

4. New York City

Wellington Guzman is a graduate of I.S. 218's Business Academy in Washington Heights and currently attends Manhattan Center High School for Mathematics and Science.

Wellington will speak of his neighborhood -- the drugs, the danger -- and how he has learned to be a real business person with

specific goals and limitless potential through the oasis of learning he found at I.S. 218 (one of the special business partnership schools created by Governor Cuomo's School and Business Alliance).

Wellington's course work stressed entrepreneurship and literacy in technology. Part of the program had him running the school store -- using computers to create and maintain his inventory and produce his payroll.

Wellington will be accompanied by students from Stuyvesant High School -- one of the premier and most technically sophisticated high schools in the country.

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