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BUILDING AMERICA'S COMPETITIVENESS: EXAMINING WHAT IS NEEDED TO COMPETE IN A GLOBAL ECONOMY

HEARING

BEFORE THE

COMMITTEE ON EDUCATION AND THE WORKFORCE U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

SECOND SESSION

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BUILDING AMERICA'S COMPETITIVENESS: EXAMINING WHAT IS NEEDED TO COMPETE IN A GLOBAL ECONOMY

Thursday, April 6, 2006
U.S. House of Representatives
Committee on Education and the Workforce
Washington, DC

The committee met, pursuant to call, at 10:07 a.m., in room 2175, Rayburn House Office Building, Hon. Howard McKeon [chairman of the committee] presiding.

Present: Representatives McKeon, Petri, Castle, Norwood, Platts, Tiberi, Keller, Osborne, Wilson, Porter, Kline, Inglis, McMorris, Fortuno, Foxx, Drake, Kuhl, Miller, Kildee, Owens, Andrews, Scott, Woolsey, Hinojosa, McCarthy, Tierney, Kind, Kucinich, Wu, Holt, Davis of California, McCollum, Davis of Illinois, Van Hollen, Ryan, and Bishop.

Staff present: James Bergeron, Counsel to the Chairman; Robert Borden, General Counsel; Steve Forde, Director of Media Relations; Ray Grangoff, Legislative Assistant; Richard Hoar, Professional Staff Member; Kimberly Ketchel, Communications Staff Assistant; Vic Klatt, Staff Director; Jim Paretti, Workforce Policy Counsel; Krisann Pearce, Deputy Director of Education and Human Resources Policy; Molly McLaughlin Salmi, Deputy Director of Workforce Policy; Deborah L. Emerson Samantar, Committee Clerk/Intern Coordinator; Rich Stombres, Assistant Director of Education and Human Resources Policy; Toyin Alli, Staff Assistant; Ellynne Bannon, Legislative Associate/Education; Alice Cain, Legislative Associate/Education; Jody Calemine, Counsel, Employer and Employee Relations; Ruth Friedman, Legislative Associate/Education; Lauren Gibbs, Legislative Associate/Education; Lloyd Horwich, Legislative Associate/Education; Tom Kiley, Communications Director; Ricardo Martinez, Legislative Associate/Education; Joe Novotny, Legislative Assistant/Education; Marsha Renwanz, Legislative Associate/Labor; Michele Varnhagen, Labor Counsel/Coordinator; and Mark Zuckerman, Staff Director/General Counsel.

Chairman MCKEON [presiding]. A quorum being present, the Committee on Education and the Workforce will come to order.

We are holding this hearing today to hear testimony on building America's competitiveness, examining what is needed to compete in a global economy.

Under committee rule 12(b), opening statements are limited to the chairman and the ranking minority member of the committee. Therefore, if other members have statements, they will be included in the hearing record.

With that, I ask unanimous consent for the hearing record to remain open 14 days to allow members' statements and other extraneous material referenced during the hearing to be submitted in the official hearing record.

Without objection, so ordered.

Good morning, and thank you all for joining us at this hearing, which will focus on what our nation can do to improve our ability to compete in the rapidly changing global economy.

I am pleased to welcome both of our panels today and extend a warm welcome back to Secretary of Labor Chao and Secretary of Education Spellings. Both of these Cabinet officials work closely with the Education and Workforce Committee, and it is always a pleasure to have them with us, particularly when we discuss a topic as important as today's.

This marks my first full committee hearing as chairman of this panel, and I am especially pleased that building American competitiveness is our theme for the day. That is because I truly believe that building American competitiveness is a fundamental focus for our committee.

The issues we deal with here each impact our nation's ability to compete in meaningful ways. We work to improve America's labor laws, expand access to quality health care, protect worker pensions, and strengthen our education and training systems from early childhood education to higher education, to workforce training programs. In short, we have a unique opportunity and responsibility to enhance U.S. competitiveness.

As our country embarks on its third century, we are faced with the challenge of new realities. These realities include a global economy in which Americans are not only competing with each other for jobs but with workers in nations around the world. And these realities include an economy that requires technology, innovation and new ideas as engines of growth. In many ways, we have left the age of muscle and the machine and have definitively entered the age of the mind. And this committee is at the forefront in deciding what steps we must take next.

Just a week ago today, the House took one of those steps by approving the College Access and Opportunity Act, which will enhance American competitiveness by expanding college access and by strengthening math, science and critical foreign language education at the college level.

For example, within the existing Byrd Honors Scholarship Program, the bill offers a comprehensive approach to strengthening American competitiveness in math and science. It provides honors scholarships to students pursuing an undergraduate, masters or doctoral degree in science, math or engineering. It allows for up to $5,000 in student loan interest to be paid on behalf of individuals with degrees in science or math who serve as teachers or other professionals in those fields. And it establishes a framework to help states better coordinate and implement reforms that improve math and science education, as well as teacher recruitment and training.

I would like to commend my committee colleagues, Mr. Ehlers and Mr. Holt, for their work to include these vital provisions in the bill.

While we considered this bill on the floor last week, another committee colleague, Representative McMorris, introduced an amendment to make this bill even stronger in its aims to enhance American competitiveness.

Incorporating key components of President Bush's American Competitiveness Initiative, which I am sure we will hear about today from Secretaries Chao and Spellings, the McMorris amendment will increase the number of teachers in advanced placement math, science and critical foreign language courses, particularly for low-income students.

It also will aid our efforts to recruit well-qualified Americans to serve as adjunct teachers—similar to President Bush's proposed Adjunct Teacher Corps—in high school math, science and critical foreign language classes. And it will establish comprehensive teacher preparation programs to encourage students to advance from elementary school through college while achieving proficiency in critical foreign languages.

This multi-pronged, fiscally responsible approach to strengthening American competitiveness is reflective of our committee's consistent commitment on this issue. We have done good work in the past, but our ultimate success in impacting American competitiveness will be determined by what we do next in the months and years to come. And that is why we are here today, to lay the groundwork for those next steps.

I look forward to our discussion, and I am eager to hear thoughts from both of our panels.

With that, I yield to my friend, Mr. Miller, for any opening statement he may have.

[The prepared statement of Chairman McKeon follows:]

Prepared Statement of Hon. Howard P. "Buck" McKeon, Chairman, Committee on Education and the Workforce

Good morning, and thank you all for joining us at this hearing, which will focus on what our nation can do to improve our ability to compete in the rapidly-changing global economy. I'm pleased to welcome both of our panels today and extend a warm welcome back to Secretary of Labor Chao and Secretary of Education Spellings. Both of these Cabinet officials work closely with the Education & the Workforce Committee, and it is always a pleasure to have them with us, particularly when we discuss a topic as important as today's.

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As our country embarks on its third century, we are faced with the challenge of new realities. These realities include a global economy in which Americans are not only competing with each other for jobs, but with workers in nations around the world. And these realities include an economy that requires technology, innovation, and new ideas as engines of growth. In many ways, we have left the age of muscle and the machine and have definitively entered the age of the mind. And this Committee is at the forefront in deciding what steps we must take next.

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I look forward to our discussion, and I am eager to hear thoughts from both of our panels. And with that, I yield to my friend Mr. Miller for any opening statement he may have.

Mr. MILLER. Thank you, Mr. Chairman. Again, congratulations on your chairmanship of this committee, and I and my members look forward to working with you on the agenda of the committee.

And I welcome Secretary Chao and Secretary Spellings to the committee.

And you are quite right, it is a good beginning to have this forum on America's competitiveness.

Many of us in Congress now have been warned by so many from across the American economy and the American intellectual community of the deficits that we now have when we look at our position, vis-a-vis other nations of the world, whether it is the number of graduate students in engineering, math and sciences in China and Korea, in India and elsewhere in the world or the fact that we now rank 16th, down from 11th, in broadband penetration in this country, that our 12th-graders still languish at the bottom in math and science by international comparisons.

I think what we have heard, and hopefully we will act on, is the fact that America really has no choice but to address this challenge to our number-one position in the world in innovation, in technology, in invention, in patents, in intellectual articles published on a yearly basis.

The Democrats in September of last year proposed an innovation agenda as a challenge to the Congress and to the administration

to make innovation science and technology once again America's top priority in economic growth and job creation.

In order to retain our number-one position in global innovation and leadership, we believe that it was essential to graduate 100,000 new scientists, engineers and mathematicians over the next 4 years, doubling the funding for overall basis research and development in the Federal Government, making the miracle of broadband Internet technology affordable and accessible to all Americans within 5 years and to achieve real energy independence within 10 years and to support entrepreneurial small businesses.

We believe only by making this renewed and, more important, a sustained commitment to innovation will our nation be able to maintain its global economic leadership, protect our national security and enjoy prosperity at home with good American jobs.

But we must put this hearing today in context, because within the hour we will start debating the budget resolution for the House of Representatives that will be presented in the floor. And within that budget resolution, while we are here talking about improving the teaching profession, attracting new people in math and science to teach in our schools, that budget resolution will contain $45 billion in cuts in education over the next 5 years just to maintain the current purchasing power of the education dollars we have today.

That budget will go backward on education to the disabled; it will be a $2.2 billion cut below 2006, which is the second year in a row in which we have those cuts.

And the fact of the matter is that most of the changes that have been made have been made by eliminating one program for the sake of others, even in the case of where those programs are vital in case of vocational education where career academies and others are attracting young people to stay in school, to give them an idea of the world of the work and changing their ideas about dropping out, programs like UROP and TRIO, which expose young people to the opportunities of higher education, and of course the basic fundamental failure to invest in No Child Left Behind so that we can meet those mandates.

When we did our innovation agenda, we met with CEOs of the high-tech companies, the biotech companies, with some of the leading venture capitalists in the world, and we met with them in Silicon Valley, we met with them in Austin, Texas, North Carolina, in El Paso, in Seattle.

And in each and every case they reminded us that in the early 1960's when President Kennedy talked about sending a person to the moon and bringing that person back safely that not only was it about a moon shot, it was about creating the greatest public-private partnership in the history of the world where the Federal Government joined up with the private sector, with the academic centers in this country and created the legacy that we have been living off that led to the high-tech revolutions, to the biotech revolutions that this country has been the leader in.

And they made it very clear that they were the inheritors of that when they started their companies in their garages or their small startups, that they were the inheritors to that infrastructure that had been built. And they also made it very clear that they wanted that public-private partnership renewed, and they felt that the

public sector was flagging in keeping up with what the private sector needed if we were in fact going to continue to lead in innovation and technology in this country in the rest of the world.

And so that is the challenge of this morning's hearing, is understanding that we are going to have multitask. We can't just concentrate on teachers, we can't just concentrate on research and development, we can't just concentrate on the deployment of broadband, we can't now double the physical sciences at the expenses of the life sciences, as we did when we doubled the life sciences over the last decade we basically took them from the physical sciences.

What we have to do today is to multitask to maintain America as the number-one leader in the world, both in economic growth and in prosperity and in security and in, most importantly, what drives all of those things, in innovation, the hallmark of the American century.

Thank you very much, Mr. Chairman. I look forward to hearing from the witnesses.

[The prepared statement of Mr. Miller follows:]

Prepared Statement of Hon. George Miller, Ranking Minority Member, Committee on Education and the Workforce

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Thank you very much, Mr. Chairman. I look forward to hearing from the witnesses.

Chairman MCKEON. Thank you, Mr. Miller.

We have two distinguished panels of witnesses today, and I would like to begin by welcoming Secretaries Chao and Spellings.

The Honorable Elaine Chao was confirmed by the U.S. Senate on January 29, 2001, as the nation's 24th secretary of labor. Over the past 5 years, the main goal of the secretary has been to keep America's workforce competitive for the 21st century.

Prior to her service as secretary, she was president and chief executive officer of United Way of America, director of the Peace Corps, deputy secretary at the U.S. Department of Transportation, chairman of the Federal Maritime Commission, deputy maritime administrator in the U.S. Department of Transportation and a White House fellow. She started very young.

Her private-sector experience includes serving as vice president of syndications at Bank America, Capital Markets Group and as a banker with Citicorp.

The Honorable Margaret Spellings was confirmed as our nation's eighth secretary of education on January 20, 2005. During President George W. Bush's first term, she served as the Assistant to the President for Domestic Policy where she helped craft education policies, including the No Child Left Behind Act.

Prior to arriving in Washington, D.C., Secretary Spellings worked for 6 years as Governor George W. Bush's senior advisor with responsibility for developing and implementing the Governor's education policy. She also served as the associate executive director of the Texas Association of School Boards.

We are honored to have both of you with us here today, and I look forward to hearing your testimony and the question and answer period.

We will begin with Secretary Chao.

STATEMENT OF HON. ELAINE L. CHAO, SECRETARY OF LABOR, U.S. DEPARTMENT OF LABOR

Secretary CHAO. Thank you, Mr. Chairman, and congratulations on assuming the responsibility and leadership of this committee.

Chairman McKeon, Congressman Miller and members of the committee, I am pleased today to be here to talk about the President's competitiveness initiative. I am also pleased to be here with my colleague, Secretary Margaret Spellings.

I want to especially commend the chairman for his vision in holding hearings on the very important issue of workforce competitiveness. The Department of Labor has a three-pronged strategy to addressing workforce competitiveness, which focuses on creating, No. 1, a demand-driven, flexible and efficient and effective publicly funded workforce system; second, by empowering workers by expanding individual choice and control over skills and job training; and, three, leveraging all existing public resources to foster a dynamic and skilled workforce.

Our nation's economy is strong and growing stronger. More than 5 million net new jobs have been created in the last 2.5 years, more than the number of jobs created by Europe and Japan, combined. The majority of the new jobs being created are in occupations that require higher skills, more education and thus, by definition, pay above average wages.

As our country transitions to a knowledge-based economy, there is a growing mismatch, a skills gap, between the new jobs being created and the skills of our workforce. Demand is especially acute in the sciences. Over the next 10 years, for example, there will be more than 6 million new and replacement job openings in engineering, science, computers, health care and technical occupations that require strong math and science skills.

The department has launched several initiatives to help close the skills gap. In 2002 and 2003, the department launched the President's High Growth Job Training and Community-Based Job Training Initiatives.

The first initiative, the High Growth Job Training Initiative, identifies sectors of the economy that are growing rapidly and helps workers get the relevant skills that they need so that they can access these opportunities.

The second initiative, the Community-Based Job Training Initiative, expands the capacity of community colleges to provide job training for skills in demand and invites them into the workforce investment system as partners.

Over the course of the last 3 years, the department has awarded over $375 million and more than 200 grants under these two programs.

Earlier this year, the department also announced the Workforce Innovation and Regional Economic Development Program, known as WIRED. This program basically brings all the stakeholders in a community, including education providers, employers, community-based organizations, labor organizations, workforce investment systems and others in a collaborative partnership to help revitalize ailing economies, and 13 grants have already been awarded under the WIRED initiative.

In addition, the President's fiscal year 2007 budget proposes that innovative new initiatives to expand access to job training and they are called the Career Advancement Accounts. This proposal will build on the reforms that we have proposed in the workforce investment system.

The Career Advancement Accounts would help the states achieve greater flexibility and empower local communities to address their specific workforce training needs, and our reforms have that as a goal as well.

Under your leadership, Mr. Chairman, last year, this committee and the House passed legislation to reauthorize the Workforce Investment Act, and the administration supports H.R. 27 because it contains many vital reforms, and we have urged the Senate to take action on this important bill.

Now, Career Advancement Accounts would complement these reforms. They are modeled after the Pell grants. They would enable eligible workers to enroll in any eligible training or education program. They would provide eligible workers with up to $3,000 annually for up to 2 years to purchase or register in a skills course of their choice. Accounts will be available to the following: adults and out-of-school youth entering or reentering the workforce or transitioning between jobs and incumbent workers in need of new skills to remain employed or to move up the career ladder.

Let me make it clear that our nation's 3,500 one-stop career centers would have a very important role to play in providing counseling, referrals and all other kinds of assistance that would help workers who need help in a very vulnerable period in their lifetime and also to know about the Career Advancement Accounts so that they can choose for themselves the kind of training courses that they would prefer.

This administration looks forward to a continuing dialog with the committee, Congress, leaders in the workforce investment system, employers, community colleges and all stakeholders in this very important proposal. We believe that the Career Advancement Accounts are a way for the workforce investment system to expand access to relevant training providers.

Now, each of the initiatives, the High Growth Job Training Initiative, the Community-Based Job Training Program, WIRED and Career Advancement Accounts, are designed to nurture the critical driver of a knowledge-based economy, which is human talent.

We hope that we can work with the committee and the Congress on a bipartisan basis to help America's workers successfully meet the competitive challenges of the 21st century.

Thank you for the opportunity to appear before you today.
[The prepared statement of Secretary Chao follows:]

Prepared Statement of Hon. Elaine L. Chao, Secretary of Labor, U.S. Department of Labor

Introduction

Good morning Chairman McKeon, Ranking Member Miller and Members of the Committee. Thank you for the opportunity to appear before you today to present the U.S. Department of Labor's efforts in advancing the goals of the President's American Competitiveness Initiative.

In his January 31st State of the Union Address, the President said that America is strong and getting stronger. The growth in U.S. productivity since 2000 has been approximately 3.4 percent annually, far above the historical average, and exceeds the productivity growth of other major industrialized countries. The President's Fiscal Year 2007 Budget recognizes the importance of innovation for our economic future—fostering and encouraging all the components that make our economic engine the envy of the world. These components include a low tax and regulatory burden, openness to international commerce and investment an environment where entrepreneurial risk-taking and investment is rewarded and finally, flexible and competitive labor, financial and product markets. When workers have the necessary skills, they become flexible enough to move relatively freely from job to job and place to place following the rhythms of the marketplace, businesses have workers they need to do the job and workers have opportunities for career advancement. I am here to talk about those programs that the Department of Labor is pursuing that will increase the skills of Americans, build workforce development capacity and enable American workers and businesses to contribute to, and benefit from, increased innovation. In partnership with the private sector, state and local governments, and colleges and universities, the American Competitiveness Initiative will promote new levels of educational achievement and economic productivity. With the right policies, we will continue to increase productivity, create more jobs, improve the quality of life and standard of living for generations to come, and maintain American's competitive edge in the global economy.

As part of the American Competitiveness Initiative, the Department of Labor is developing more streamlined and efficient ways for workers to access training and increase their skills. Aligning the workforce investment system with new economic realities facing the United States is among the critical factors in the success of the American Competitiveness Initiative. As part of this initiative, the President's 2007 Budget calls for Career Advancement Accounts that American workers can use to obtain the education and training they need to compete in the 21st century economy. This initiative builds on our continued commitment to championing the transformation of the workforce investment system by making it demand-driven through the President's High Growth Job Training Initiative, Community-Based Job Training Grants, and the Workforce Innovation in Regional Economic Development (WIRED) hitiative, which is designed to transform and revitalize regional economies through a focus on talent development.

America's Workforce in the 21st Century Economy

Today, our country finds itself in a situation unlike any we have experienced in our history. The world continues to become dramatically interconnected and competitive. The advances we have made in communications and technology allow for instant access to information from all parts of the globe and have effectively-diminished national borders as barriers to global commerce.

One way to maintain our competitive advantage is by increasing the skill levels of American workers. The needs of the 21st century economy are very different than those we have encountered in the past. Industries such as manufacturing and retail now need workers who understand computers, robotics and supply chain management. Fields such as health care and construction need more technical and skilled labor than ever before. New industries utilizing new technologies, like biotechnology, geospatial technology and nanotechnology have emerged, and others on the horizon are just a gleam in the eye of an entrepreneur today.

Many of the fastest growing jobs of the future will need to be filled by "knowledge workers" who have specialized skills and training. These are the jobs that will drive innovation in the world economy and increase living standards.

The growing demand for highly skilled workers in such fields as health care, information technology, and advanced manufacturing, comes at a time when the labor pool as a whole is growing much more slowly as a result of the aging and retirement of the baby boom generation in combination with other demographic changes. As a

result, the need for well-designed systems that can ensure a steady flow of trained workers to meet employer needs is greater than ever before.

Educational achievement in high school and beyond is a key predictor of economic success. But it no longer stops there. Whether it is an 18-year old student entering a four-year university or a 50-year old displaced worker entering a community college to learn new skills, our citizens need access to the education and skills development that the global economy demands. Workers today must commit themselves to lifelong learning and to continually upgrading their skills.

America finds itself at a crossroads. To maintain our productivity growth and to continue to grow our economy, we need a skilled workforce that has access to lifelong training and development opportunities. To balance our shifting workforce demographics, we need a system that reaches out to every segment of the workforce and leaves no potential worker behind. Addressing these needs requires innovative new strategies and services to upgrade workers skills and connect workers with employment opportunities.

One important aspect of the President's ambitious strategy to encourage American innovation and strengthen our ability to benefit from the growth in the global economy requires us to reform our workforce investment system. The legislation to reauthorize the Workforce Investment Act (WIA) that was passed by this Committee and the House last year (H.R. 27, the Job Training Improvement Act of 2005) incorporates many important reforms. The Administration also would like for the Senate to move on WIA reform and for reauthorization of WIA, with meaningful reform, to be enacted into law this year.

The workforce investment system should recognize and strengthen workers' ownership of their careers, and provide more flexible resources and services designed to meet their changing needs. Studies have shown that workers make sound decisions about tapping resources to advance their careers when they

have good information on available options. Workers need to be provided as many choices as possible to gain the right skills and secure the best career opportunities, and high quality workforce information needs to be available to enable them to make educated choices. This will help ensure flexible labor markets, a key element to a pro-growth economy that is capable of exploiting innovations and innovative opportunities.

High Growth Job Training Initiative

An important part of supporting the American Competitiveness Initiative is developing the current workforce investment system into one that is relevant in the 21?? century economy. Over the past four years, the Department of Labor has been implementing the President's High Growth Job Training Initiative. This initiative is the cornerstone of the Department's efforts to create a workforce system that is demand-driven and balance the skills of America's workers with the demands of employers.

Through the President's High Growth Job Training Initiative, we have invested over $250 million in 130 projects nationwide to model partnerships among employers, education programs, and the public workforce system? Each project targets the skill and talent needs of high growth, high workforce demand industries in our nation's economy and provides the resources necessary to develop the capacity to train workers in the skills demanded by the 21st Century economy. To date, ETA has worked with 14 of these industries and industry sectors: Advanced Manufacturing, Automotive Services; Aerospace; Biotechnology; Construction; Energy; Financial Services; Geospatial Technologies; Health Care; Homeland Security; Hospitality; Information Technology; Retail; and Transportation.

Through the partnerships and project activities developed under the High Growth Job Training Initiative, communities are ensuring that the skills individuals acquire are in demand. By training workers with the skills employer want we expect that more workers will obtain quality jobs that pay higher wages7 while enabling employers to address their skill shortages and better compete in today's changing economy.

We are already seeing tremendous successes under this model. As an example, let me share with you the exciting work going on in the automotive industry in Michigan. On June 30, 2004, ETA awarded a $5,000,000 grant to the Downniver Community Conference (DCC) for a proposal to develop innovative and responsive automotive manufacturing training models at the Auto Alliance International (AAI) plant in Flat Rock, Michigan This facility, a joint venture of Ford and Mazda, is the first in the world with the capacity to produce front and rear-wheel drive vehicles with four, six, or eight cylinder power trains, and automatic or manual transmissions on the same assembly line.

The DCC project is a partnership-based model for helping automotive workers quickly and efficiently transition to new production processes. The grant provides advanced manufacturing training, education, and skills upgrades for new employees who are working to produce the Ford Mustang and Mazda 6. DCC uses the grant to track, analyze, and map transferable manufacturing skill sets and competencies required for the new positions. DCC and its business, training, educationaL and community partners then deploy industry-driven, competency-based training to all AAI employees. This training is continuously upgraded, and re-delivered as technology and skills requirements evolve. All training modules culminate in industry-recognized certifications. As a result of this High Growth grant approximately 2,500 participants have obtained job placements to date. The hourly wage received by these participants ranged between $18.75 and $26.00, and 94% of placed individuals have retained their jobs for nine months.

Cotmrnmity-Based Job Training Grants

Our work under the High Growth Job Training Initiative revealed a critical shortcoming in the economic development capacity of many regions: many communities are not positioned to meet the training demands of our high growth industries because of limited training capacity and outdated curricula and training delivery systems.

To address this need for expanded affordable, flexible education and training capacity in local communities across the country, President Bush established the Community College Initiative. The Initiative provides Community-Based Job Training Grants to help communities to better train workers for jobs in high growth sectors by utilizing the expertise of America's community colleges. Due to their close connection to local labor markets, community colleges are well positioned to understand the intricacies of local economies and better prepare workers for high demand occupations. As we begin to increase the skill level of America's workers and develop the talent needed to benefit from the growth in the global economy, community colleges will become an even more critical provider of training for workers wanting to develop, retool, refine, and broaden their skills. In the fall of 2005, we announced the first installment of this initiative by investing $125 million in grants to 70 community colleges around the country. We expect to solicit grant applications for our second $124 million investment in the summer of 2006.

The WIRED Initiative

The Department of Labor is answering the call for competitiveness by fostering innovation through regional economic development.

Though global competition is often seen as a national challenge, it is actually at the regional level where solutions must be developed and the challenges met. It is in regional economies where companies, workers, researchers, entrepreneurs and government come together to create competitive advantage and where new ideas and new knowledge are transformed into advanced, high-quality products or services—facilitating the growth of a regional economy requires attention to three critical elements. The first is infrastructure. This includes not only the traditional factors such as highways, bridges, and buildings, but also 21st century factors like access to broadband and wireless networks. The second critical element is investment of capital, including the availability of risk capital and the conditions that encourage entrepreneurial risk-taking. And the third element is a flexible, talented labor force. A region may possess a strong infrastructure and the investment resources for success, but without the talented men and women to use those elements for economic growth, they are meaningless.

This recognition of the importance of talent development is key to President Bush's Competitiveness Agenda and our Workforce Innovation in Regional Economic Development Initiative which is designed to transform and revitalize regional economies through a focus on talent development. Thirteen regions were awarded grants in February as a result of a competitive process. Through WIRED, we provide the financial and expert assistance needed for regions to make the leap to an innovation economy.

The WIRED Initiative is focusing on labor market areas that are comprised of multiple jurisdictions within a state or across state borders. It seeks to help regions transform their workforce investment economic development and education systems to support overall regional economic growth and development by fostering collaborative partnerships among universities, businesses, government and workforce and economic development organizations. The regions selected have been affected by global trade, are dependent on a single industry, affected by BRAC closings, or are recovering from natural disasters.

Ultimately, the WIRED Initiative supports innovative approaches to workforce and economic development that go beyond traditional strategies preparing workers to compete and succeed. Through WIRED projects, we intend to catalyze the creation of high-skill and high-wage opportunities for American workers within the context of regional economies.

Career Advancement Accounts

The High-Growth Job Training Initiative, the Community College Initiative and WIRED are all efforts to utilize the Department's discretionary dollars to fund cutting-edge state and local programs. These investments will serve as models for the entire public workforce system. Meanwhile, the Department's FY 2007 Budget is centered on a bold proposal designed to move the entire system in a direction that will better support our nation's competitiveness. The Career Advancement Accounts (CAAs) proposal is designed to give states and local communities more flexibility to design streamlined workforce systems that best fit the unique needs of their states and that better serve the needs of American workers and employers by making more money directly available for training. Under the proposal the four separate funding streams that are currently allotted for the WIA Adult Dislocated Worker, and Youth formula programs and the Wagner-Peyser Act program, respectively, would be streamlined into a single funding stream to be allotted to the States to carry out the Career Advancement Accounts proposal.

The Career Advancement Accounts proposal continues the themes articulated by President Bush in his proposals for job training reform. These themes are:

- Integrating programs to reduce duplication and overlap;
- Reducing administrative overhead costs to direct more funds to training;
- Providing workers with skills demanded by employers for high growth jobs and careers; and
- Giving workers greater personal ownership of their job training and education investments.

Career Advancement Accounts are sell-managed accounts that enable current and future workers to gain the skills needed to successfully enter, navigate and advance in the 21st century labor market. Accounts would be available to both adults and out-of-school youth entering or re-entering the workforce or transitioning between jobs, or incumbent workers in need of new skills to remain employed or to move up the career ladder. Additional eligibility criteria and service priorities would be established by states. States must determine priority of service consistent with the veterans' priority of service requirement under the Jobs for Veterans Act (PL 107-288).

The maximum amount of an account would be $3,000 for one year. This is sufficient to finance approximately one year's study at a community college. The accounts may be renewed for one additional year, for a total two-year account of up to $6,000 per worker.

Individuals would be able to apply for an account at a One-Stop Career Center or through other processes developed by individual states. Ideally, states would also establish an on-line application system. The account funds can be used for occupational skills training, to help the individual gain foundational workforce and academic skills, and for work-based experience through on-the-job training. CAAs can also be used by individuals to pay for books and fees associated with education and training.

With lower administrative costs and the vast majority of funding used to finance the actual accounts, this proposal means that more individuals will be able to participate in job training and attain new and higher level job skills. In fact the number of individuals receiving Career Advancement Accounts will be more than triple the number of people completing job training in the workforce investment system today. It is projected that about 800,000 accounts would be available each year.

The Department of Labor would be the Federal agency responsible for administering the Career Advancement Accounts program. Its responsibilities would include Federal oversight; providing technical assistance to states; providing states, employers, and job seekers with the best information on economic and employment trends, growth industries and their job skill requirements; supporting innovative workforce demonstration initiatives; research and evaluation; and national leadership.

States would serve as the "fund administrators" for Career Advancement Accounts. States would have discretion to determine how individuals are approved for accounts and how to administer the accounts.

Funding would be distributed to states under a single formula that reflects the factors used in allocating funds for the programs being replaced, such as unemployment and civilian labor force data. The intention is that under this new formula,

states would receive approximately the combined amount of allocations under the funding streams being replaced.

To receive funding for Career Advancement Accounts, states would be required to submit a State Plan, which covers a five-year period and is updated every two years. The State Plan would outline how the state administers Career Advancement Accounts and provides core employment services at One-Stop Career Centers.

States will report on performance for three primary outcome measures: (1) entered employment; (2) retention in employment; and (3) earnings. Attainment of a degree or certificate, placement in education, and literacy/numeracy gains would also be tracked as secondary outcomes on the individual record.

Instead of the prescriptive federal requirements for determining the eligibility of training providers under current law, States would describe in the State Plan their approach to ensuring the credibility and accountability of training and service providers receiving Federal funds (i.e., Career Advancement Accounts). States would also outline how they would ensure that account recipients have sufficient consumer information on the quality and outcomes of the education, training and other services provided by institutions and organizations where the accounts are used.

As indicated above, One-Stop Career Centers would be retained to deliver core employment services such as job search assistance and labor market information, among other related activities, and provide access to Career Advancement Accounts. However, the One-Stop Career Center system, and the governance structure that supports that system, would be streamlined and strengthened by eliminating a "one-size-fits-all" approach to the local delivery of services.

Requirements related to the number and location of One-Stop Career Centers and the membership of workforce investment boards would be relaxed, allowing states and local areas to design a delivery system that best meets the needs of regional economies and labor markets.

In addition to providing access to CAAs, the One Stop Centers will continue to provide workers and job seekers with basic employment services to assist their career development and ensure they have enough relevant information to make informed decisions about their future. At One-Stop Career Centers, job seekers would be able to receive core employment services, such as career and skills assessment job placement assistance, and basic career counseling. Additional services, such as diagnostic testing and short-term prevocational service, would be authorized. Services to employers would include postings of job openings and assistance in finding trained workers. Access to information and services of One-Stop partner programs also would be available at the One-Stop Career Centers. Supportive services, such as child care and transportation, would be made available and paid for through arrangements made by the state with other Federal, state and local supportive service programs, and states would be encouraged to provide information and access to these services at the One-Stop Career Centers.

Career Advancement Accounts will complement the more than $80 billion in Federal student aid that will be made available in 2007, which includes $12.7 billion in new funding for Federal Pell Grants. Since Career Advancement Accounts are targeted toward workers seeking to upgrade their skills, there is more flexibility in how these funds can be used. For instance, unlike Pell Grants and other Federal student aid, Career Advancement Accounts would be available to individuals pursuing short-term training, in courses that last 10 weeks or less. Career Advancement Accounts would be available to individuals enrolled in specific courses to upgrade their skills, but are not planning to complete a degree or certificate program. The Department of Labor is committed to working closely with the Department of Education to ensure that these accounts are well coordinated with the existing federal student aid programs.

Conclusion

The Career Advancement Accounts proposal is part of the President's American Competitiveness Initiative, and the other initiatives I have discussed, the High Growth Job Training Initiative, the Community College Initiative, and WIRED, complement the ACI. These initiatives are meant to demonstrate how talent development can increase productivity and drive economic growth. They will help American workers benefit from the growth in the global economy.

We believe that the American Competitiveness Initiative will provide our nation with the tools to better educate our children, to train our workforce, and to push the boundaries of our scientific and technological capabilities now and in the future.

Chairman and members of the committee, this concludes my remarks. I am happy to answer any of your questions. Thank you.

Chairman MCKEON. Thank you very much.

Secretary Spellings?

STATEMENT OF HON. MARGARET SPELLINGS, SECRETARY OF EDUCATION, U.S. DEPARTMENT OF EDUCATION

Secretary SPELLINGS. Thank you, Mr. Chairman, Congressman Miller and members of the committee. I very much appreciate the opportunity——

Chairman MCKEON. Is your mike on?

Secretary SPELLINGS. Oh, I am sorry. Thank you, Mr. Chairman.

I appreciate this opportunity to join my friend and colleague, Secretary Chao, in discussing the President's competitiveness agenda with you.

I am especially honored to be here for the first full committee hearing led by you, Chairman McKeon. Under your leadership, this committee has already done important work to ensure America remains the world leader in innovation.

Last week, as you noted, the full House of Representatives approved the College Access and Opportunity Act, which strengthens math, science and critical foreign language instruction for hundreds of thousands of students. In today's knowledge economy, these reforms are absolutely critical. You can't pick up a newspaper or magazine these days without reading about global competitiveness, especially in math and science. While we are asleep tonight, accountants in India will do our taxes, radiologists in Australia will read our CAT scans and technicians in China will build our computers.

As other nations race to catch up, there is mounting evidence that American students are falling behind. I know you know the numbers, but they bear repeating. Currently, our 15-year-olds rank 24th out of 29 developed nations in math, literacy and problem solving. Half of our 17-year-olds don't have the necessary math skills to work as a production associate in a modern auto plant.

We saw this coming in the early 1980's when the National Commission on Educational Excellence released the Nation at Risk report. It warned that our educational system was being eroded by a tide of mediocrity and called for 3 years of math and science in every American high school. Today, more than 20 years later, we are not even close to meeting that goal, and we have run out of time to wait.

We know, as Secretary Chao said, that 90 percent of the fastest growing jobs require post-secondary education, and yet fewer than half of our students graduate from high school ready for college-level math and science. Every year, about a million students drop out of high school, nearly five out of 10 African-American and Hispanic 9th-graders will not graduate from high school on time, and the Title I report we submitted to you all yesterday shows that graduation rate calculations vary widely across our country.

When the state and Federal numbers don't match up, we must take a closer look at whether our high schools are graduating students on time and ready for the workforce or college.

Wherever I go, like you, I hear from Governors, business people, educators and parents that our students are not prepared. I have heard the same from you.

Last week, I testified before the House Science Committee and while that appearance was a little departure from my normal routine, it underscored the fact that innovation, competitiveness and education go hand in hand.

If we are going to move in a new, positive direction, we must make our high schools more rigorous. We must encourage more students to take more advanced math and science classes. Employers today need workers with pocket protector skills, creative, problem solvers with strong math and science backgrounds.

As Congressman Ehlers has said, "If you aren't a geek yourself, you will probably end up working for one."

Congressman, you were country before country was cool, as we say in Texas, in math and science education, and I appreciate your work to champion reform.

With No Child Left Behind, we have laid a solid foundation on student achievement. Scores are at an all-time high for African-American and Hispanic students, especially in the early grades where we have focused. Over the last 5 years, more reading progress has been made among 9-year-olds than in the previous 28 years combined. We are on the right track.

I see it at Harlan Elementary in Wilmington, just one of the schools that has put Congressman Castle's home state of Delaware on track to have every child reading on grade level by 2014, as required by No Child Left Behind.

And I am sure that you, Mr. Chairman, Congressman Miller and all of you from California are proud of districts like Garden Grove where 75 percent of the students do not speak English, 60 percent are poor and all but two of their 67 schools met or exceeded the goals of No Child Left Behind. This law is working. It is raising achievement nationwide by shining a bright light on schools and districts and on a lot of great stories.

It is also shining a light on schools and districts that aren't doing right by the children and parents they serve. For example, the Title I report we released yesterday shows that 1.4 million students were eligible for free tutoring that the law provides but only 17 percent of them got these services. More than half of school districts don't even tell parents that their children are eligible for these options until after the school year has already started, making it virtually impossible for students to transfer schools without disrupting their education. And that is unacceptable.

We at the Department of Education will take necessary steps to ensure states comply with these provisions of the law.

Without No Child Left Behind, we wouldn't which schools are falling short of standards, we wouldn't necessarily know which children need extra help, and we wouldn't be able to hold ourselves accountable when we don't deliver that help. In other words, this law is forcing all of us to live up to our responsibilities and its increasing options for families. Now, we must work together to increase academic rigor across the board.

The President's American Competitiveness Initiative would devote $380 million to strengthen K-12 math and science education. Overall, the Department of Education will increase funding for our programs in these critical areas by 51 percent. The President has called for the formation of a National Math Panel, a group of ex-

perts to help us identify the best research on proven strategies to teach math, just as we did in reading. And his budget also includes $250 million for a new Math Now Initiative that will give elementary and middle school students that academic foundation necessary to succeed in rigorous math classes in high school, such as advanced placement.

Our challenge today is that nearly 40 percent of our high schools offer no AP classes, and that must change, especially when we know that just taking one or two AP courses increases a student's chance of graduating from college on time. The President has called for $122 million to prepare 70,000 teachers to lead AP and International Baccalaureate classes in math, science and critical foreign languages.

And to ease the shortage of teachers with strong subject matter knowledge, the President's budget includes $25 million to help recruit 30,000 math and science professionals to become adjunct teachers in these critical subject areas.

With the College Access and Opportunity Act, we have started the process of taking our education system to the next level.

And I would like to offer a special thanks to you, Representative McMorris, and everyone who worked with you on the amendment to move that agenda forward.

This is urgent work, and we only have time to do what works. As policymakers, we must focus on results. We have looked at data to see what policies are most effective for students and use taxpayers' most effectively. We must operate more efficiently by eliminating or consolidating programs that aren't getting results for students.

According to the GAO, 13 different government agencies spend about $2.8 billion on 207 different programs for math and science education. Almost half of them receive $1 million or less. These programs are in their own silos with little or no coordination between them and no linkage with No Child Left Behind goals of raising student achievement for all students. It is 1,000 flowers blooming and maybe even a few weeds throughout our government.

Particularly during these tight budget times, we must ask ourselves whether we are spending each and every dollar wisely and well on our most pressing needs. Are we focusing our efforts on teachers who already possess a strong science or math knowledge base? For example, one program I heard about at the Science Committee hearing I mentioned spent Federal dollars on sending teachers to Antarctica. Is that the best way to get the most out of our money or should we reach out to the teachers who need more training and make sure they are teaching in the schools who need them most.

Our curriculum products, developed by many, many agencies with Federal dollars, align to state standards and assessments, as required by No Child Left Behind. Do we want these programs to produce an educated workforce, more Nobel Prize winners or both? And at the end of the day, are we raising student achievement? Are we helping schools and states meet the goals of No Child Left Behind?

Congress recently created the American Competitiveness Council, which I chair, to ensure that we align our efforts around

shared, strategic goals. At the beginning of March, the President and I led the first meeting to begin the process of evaluating how well these math and science programs are working at improved coordination between them. And I have to tell you, we have much work to do.

So I am asking all of you to join Chairman McKeon in reaching out to the different congressional committees that govern these programs. We must build consensus around common goals, like providing high-quality programs that are accessible to every child, not just the lucky ones. And we must align our efforts with the principles of No Child Left Behind by continuing to hold schools accountable for getting all students to grade level in reading and math by 2014 and to give local policymakers and educators resources, authority and the research base to do what is best for students.

As leaders, as policymakers and as parents, it is our job to look down the road and make sure our kids are prepared for the future. As the President said in the State of the Union address, "If we ensure that America's children succeed in life, they will ensure that America succeeds in the world."

Thank you, Mr. Chairman. I would be happy to answer any questions.

[The prepared statement of Secretary Spellings follows:]

Prepared Statement of Hon. Margaret Spellings, Secretary of Education, U.S. Department of Education

Mr. Chairman, Congressman Miller and members of the committee, thank you for inviting me today. I appreciate this opportunity to join my colleague, Secretary Chao, in discussing the President's Competitiveness agenda with you, and I'm especially honored to be here for the first full Committee hearing led by Chairman McKeon. Under your leadership, this committee has already done important work to ensure America remains the world's leader in innovation.

The Challenge: To Innovate Education

America has long been innovation's home. When faced with a challenge, we invent the answer: from the first telephone to global satellite communications; from the first computer to the World Wide Web; from the Wright Brothers to Neil Armstrong. To Americans, innovation means much more than the latest gadget. It means creating a more productive, prosperous, mobile and healthy society. Innovation fuels our way of life and improves our quality of life. And its wellspring is education.

Throughout his Administration, President Bush has made innovation and education top priorities. The President worked with you and your colleagues in the Senate, to pass the most far-reaching education reform in decades, the No Child Left Behind Act (NCLB). NCLB has brought high standards and accountability to public schools and sparked a mathematics and reading revival in the early grades.

While the United States is leading the world in science and technology and making strong reforms to its education system, the rest of the world is not standing still. America no longer holds the sole patent on innovation. Inspired by our example, countries such as China, India and South Korea have invested heavily in education, technology, and research and development. America now has billions of competitors throughout the world, challenging us to set our sights even higher.

Our educational leadership has been challenged as well, with many developed nations' students outperforming ours in international tests, particularly in math and science, an ominous sign for many American schools. These test scores are linked to a lack of challenging coursework. According to some estimates, America's share of the world's science and engineering doctorates is predicted to fall to15 percent by 2010.

This global challenge requires bold action and leadership. America has done it before. Following the Soviet Union's 1957 launch of Sputnik, the world's first satellite, Congress passed and President Eisenhower signed into law the National Defense Education Act of 1958 (NDEA). NDEA encouraged more college and university students to pursue degrees in engineering and it brought the public and private sectors

together as partners to capture the interest, imagination and dedication of American students. And it worked. Within a decade, the number of science and engineering doctorates awarded in the United States annually had tripled, accounting for more than half the world's total by 1970.

Today, America faces challenges more difficult and complex than a single satellite. The spread of freedom is spurring technological innovation and global competition at a pace never before seen. This trend makes it increasingly important that our economy be more flexible and responsive, to make sure that we continue to lead in innovation and technological development and to make sure we have a workforce that has the skill sets necessary to do so.

Education is the gateway to opportunity and the foundation of a knowledge-based, innovation-driven economy. Employers are increasingly looking for workers who have analytical, technical and problem-solving skills.

We have to run to keep up. A high school diploma, once desirable, is now essential, and, increasingly, insufficient. About 90 percent of the fastest-growing occupations of the future will generally require some post-secondary education. It is therefore unacceptable that among all ninth-graders in public schools, about three in ten do not graduate on time; or that for black and Hispanic students the figure is about five in ten. If current trends continue, by 2012, over 40 percent of factory jobs will require post-secondary education, according to the National Association of Manufacturers. And yet, almost half of our 17-year-olds do not have the basic understanding of math needed to qualify for a production associate's job at a modern auto plant.

Improving education is critical not only to America's economic security, but also to our national security. Today, not one but 3,000 satellites circle the earth. U.S. soldiers use the latest communications and surveillance technology to fight the global war on terrorism. Advanced math skills are used to identify and undermine terrorist networks. Government and the private sector engineer new ways to protect lives and infrastructure from harm. And the effort to spread freedom to other nations and cultures demands speakers fluent in languages such as Arabic, Farsi, Chinese, and Russian. Addressing these challenges will advance opportunity and entrepreneurship at home and promote democracy and understanding abroad.

Rigorous instruction, high standards and accountability are helping to raise achievement levels among American students, particularly in the early grades. As all students work to achieve proficiency in math and reading by 2014, an innovative education reform effort is needed.

America's civic, political and business leaders agree: To sustain our quality and way of life, we must act now. And President Bush is leading the charge by proposing investments and reforms through a number of key initiatives that I would like to outline today.

The Answer: President Bush's Education Agenda

President Bush's answer to America's challenge begins with the American Competitiveness Initiative. This multi-agency Initiative will commit $5.9 billion in FY 2007, and more than $137 billion over the next 10 years, to strengthen education, promote research and development and encourage entrepreneurship. In the research arena, it will increase our investment in physical science and engineering research, the results of which will fuel technological innovation for decades to come. In the education arena, the initiative will bring together leaders from the public sector, private sector and education community to better prepare our students for the 21st century. The initiative will place a greater emphasis on math instruction from the earliest grade levels. It will ensure that high schools offer more rigorous coursework, including Advanced Placement and International Baccalaureate courses in math, science and critical-need foreign languages. It will inform teachers of the most effective, research-based approaches to teaching math. It will encourage professionals in those fields to become teachers themselves, and it will evaluate all federally funded math and science education programs to ensure the most effective use of the taxpayers' dollars.

The President's High School Reform initiative will help ensure that a diploma becomes a ticket to success for all graduates, whether they enter the workforce or go on to higher education. It will bring high standards and accountability to high schools by aligning their academic goals and performance with the No Child Left Behind Act. Through assessments and targeted interventions, it will help educators raise achievement levels and close the achievement gap. It will also help alleviate the dropout problem by focusing more attention on at-risk students struggling to reach grade level in reading or math.

Finally, the President's National Security Language Initiative, announced on Jan. 5, 2006, will help more American students master critical-need foreign languages to advance global competitiveness and national security. This joint project, in collabo-

ration with the Department of State, Department of Defense and the Director of National Intelligence, will train teachers and aid students in those fields.

The Challenge: Knowledge of Math and Science

In this changed world, knowledge of math and science is paramount. In the words of BusinessWeek, "It's a magnificent time to know math." "Math entrepreneurs" are translating the world into numbers-which translates into big salaries. According to the Bureau of Labor Statistics, new and replacement job openings requiring science, engineering or technical training will increase by more than 24 percent, to 6.3 million, between 2004 and 2014.

Of all of the recommendations contained in the National Academies' report, Rising Above the Gathering Storm, the highest priority is to vastly improve K-12 math and science education. Schools must help students develop the skills they will need to compete and succeed in higher education and the workforce, which are increasingly connected in this changed world. All Americans must be technically adept and numerically literate—regardless of their chosen occupation—so that they can make informed decisions and enjoy advancement in their careers. And this technically and numerically literate population must also yield additional practitioners of math, science, and engineering to meet the needs of academia and industry well into the future. Industry must do its part to ensure that career opportunities provided to those with training in math, science and engineering are as stable and financially rewarding as other jobs, such as medicine, law and finance.

We clearly have a long way to go. High school test scores in math have barely budged since the early 1970s. And less than half of high school graduates in 2005 were ready for college-level math and science coursework, according to ACT.

In 1983, the landmark A Nation at Risk report recommended that high school students be required to take a minimum of three years of math and three years of science to graduate. Yet today, only 22 states and the District of Columbia require at least this amount to graduate in the class of 2006. Even fewer require high school exit exams (which are often administered in 10th or 11th grade, leading many employers and universities to discount the results). Just one state-Alabama-calls for current students to take four years of both science and math to graduate.

A major part of the answer is teacher training. When we compare the U.S. education system with that of the top performing countries, we find several significant differences, most notably that a much lower proportion of U.S. math and science teachers actually have a degree in the area in which they are teaching. Because our elementary schools employ generalist teachers who are required to teach all academic subjects, most have degrees in education and have completed little or no coursework in math or science. Three out of four fourth-grade math and science teachers in the U.S. do not have a specialization in those subjects. And students from low-income communities are far less likely than their more affluent peers to have teachers certified in the subject they teach. With two-thirds of our math and science teachers expected to retire by 2010, we have a challenge to produce new teachers to fill that gap, but we also have an opportunity to change the way in which new teachers are trained so that future teachers will have greater content knowledge in math and science.

Strengthening math and science standards is an economic imperative, for the nation and for individual citizens. According to Department statistics, students who take advanced math courses in high school (such as trigonometry, precalculus and calculus) are far more likely to earn a bachelor's degree. Additionally, students from low-income families who acquire strong math skills by the eighth grade are 10 times more likely to finish college than peers of the same socioeconomic background who do not.

Still, old attitudes about math die hard. A recent survey commissioned by the Raytheon Company found that 84 percent of middle school students would rather clean their rooms, take out the garbage or go to the dentist than do their math homework. According to the Business Roundtable, just 5 percent of parents say they would "try to persuade their child toward careers in science, technology, mathematics or engineering." Many people still view math and science as "nerdy" subjects with little relevance to the "real world." Like it or not, that world has changed forever.

The Answer: American Competitiveness Initiative

President Bush's American Competitiveness Initiative seeks to improve learning and instruction in mathematics and science.

The Department of Education's proposals within this Initiative are as follows:

• National Math Panel: Based on the influential National Reading Panel, the National Math Panel would convene experts to evaluate empirically the effectiveness

of various approaches to teaching math, creating a research base to improve instructional methods for teachers. It would lay the groundwork for the Math Now program for grades K-7 to prepare every student to take and pass algebra;

• Math Now for Elementary School Students: Like the successful and popular Reading First program, Math Now for Elementary School Students would promote promising, research-based practices in mathematics instruction and prepare students for more rigorous math coursework in middle and high school;

• Math Now for Middle School Students: Similar to the current Striving Readers Initiative, Math Now for Middle School Students would diagnose students' deficiencies in math proficiency and provide intensive and systematic instruction to enable them to take and pass algebra;

• Advanced Placement-International Baccalaureate (AP-IB) Incentive Program: The AP-IB Incentive Program would train 70,000 additional teachers to lead AP-IB math and science courses. It would increase the number of students taking AP-IB tests to 1.5 million over the next five years with the goal of tripling the number of passing test-takers to approximately 700,000;

• Adjunct Teacher Corps: The Adjunct Teacher Corps would provide funding to match contributions from States and the private sector to train 30,000 qualified math and science professionals to become adjunct high school teachers by 2015; and

• Including Science Assessments in NCLB: NCLB requires every State to develop and administer science assessments once in each of three grade spans by the 2007-08 school year, and including these assessments in the accountability system will ensure students are learning the necessary content and skills to be successful in the 21st century workforce.

Other Math and Science Initiatives

• Academic Competitiveness Grants and SMART Grant Program: This higher education grant program was a key component of the Higher Education Reconciliation Act.

• This program will build on the success of the Pell Grant program and benefit more than 500,000 students in need.

• Academic Competitiveness grants will provide increased funds for low-income students who take a rigorous academic curriculum in high school. Grants in the amount of $750 will be awarded to qualified first-year college students who completed a rigorous high school program; grants in the amount of $1,300 will be awarded to second-year students who completed a rigorous program and who maintain a 3.0 average in college.

• SMART grants will go to college juniors and seniors studying math, science or critical-need foreign languages who also maintain a 3.0 GPA. This will encourage more students to go into fields that improve America's security and competitiveness.

• Mathematics and Science Partnerships: This program supports the American Competitiveness Initiative by providing state formula grants to help improve students' academic achievement in rigorous math and science courses. It also assists teachers by integrating proven, research-based teaching methods into the curricula.

• Expanded Teacher Loan Forgiveness: This popular program offers up to $17,500 (up from $5,000) in loan forgiveness for highly qualified math, science and special education teachers serving challenging, low-income schools and communities.

Academic Competitiveness Council

The Deficit Reduction Act of 2005, signed into law by the President on February 8, 2006, created an Academic Competitiveness Council (ACC) chaired by the Secretary of Education, and consisting of Federal Government agencies with education programs in science, technology, engineering, and mathematics (STEM). Its mission under law is to identify all Federal education programs with a math or science focus, determine the effectiveness of each program, identify areas of overlap, and recommend ways to efficiently integrate and coordinate in the future. The Council will also ensure that these programs, which focus on elementary and secondary education and teacher training, are aligned with the principles of No Child Left Behind, as appropriate.

The first ACC meeting took place on March 6, 2006, at the White House with the President and the respective Secretaries and directors of the agencies with STEM education programs. The Department of Education is now working with the Office of Management and Budget to form a working group with the appropriate senior staff from each of these agencies to begin taking inventory of their various STEM education programs. A report to Congress is due February 2007.

The Challenge: Accelerating Our Schools' Progress

Innovating and improving America's schools will not occur overnight. It took time for eight other developed nations to surpass America's high school graduation rate

among adults aged 25 to 34; and it will take time for the United States to regain its leadership. We must start by accelerating our progress.

A comprehensive problem demands a comprehensive solution, extending from kindergarten through high school graduation. The good news is that educators and policymakers are learning more and more about what works. A half-century ago, the United States turned the threat of Soviet competition into proof of our ability to improve our schools and quality of life. Just four years ago, the United States turned a growing achievement gap into the bipartisan No Child Left Behind Act.

The law set a course for proficiency for all students in the core subjects of reading and math by the year 2014. Students in grades 3 through 8 are now learning under high standards. Teachers are using proven instructional methods in reading. Schools are being held accountable for results. Parents have more information and choices. And states have more flexibility to spend federal K-12 education resources, which have increased by 41 percent since 2001.

The early results are in. Across the country, academic achievement has risen significantly in the earliest grades, with math scores at all-time highs, including among African American and Hispanic students. In the last two years, the number of fourth-graders who learned their fundamental math skills increased by 127,000 according to Department data. Long-term trends show that more reading progress was made among 9-year-olds between 1999-2004 than in the previous 28 years combined. Meanwhile, according to the Nation's Report Card, the achievement gaps in reading and math between white and African American nine-year-olds and between white and Hispanic nine-year-olds are at all-time lows. Educators use terms like "amazing," "stunning" and "remarkable" to describe the progress on long-term NAEP.

No Child Left Behind has set the goal of every child achieving, but the states and schools themselves have done the heavy lifting to implement curriculum standards and assessment protocols that they will use to meet these standards. For the first time, all 50 states have unique accountability plans in place, with real consequences attached. The results can be seen in schools like Maryland's North Glen Elementary. In 2003, just 57 percent of North Glen's students were proficient in reading, while 46 percent were proficient in math. Those numbers have skyrocketed to 82 percent and 84 percent, respectively.

Another example is Charles L. Gideons Elementary School in Atlanta. The number of its students meeting Georgia's standards in reading has increased by 23 percentage points since 2003. For math the news is even better: a 34 percentage-point improvement during the same period. The National Math Panel will examine schools like this one that have made significant progress to determine "what worked" in improving mathematics education and performance. If we better understand what worked at these model schools, we can then use programs like the new Math Now program to disseminate these principles and practices to teachers across the country.

A districtwide success occurred in Garden Grove, California. Three-fourths of the Garden Grove Unified School District's students do not speak English. Nearly 60 percent are from low-income families. Nevertheless, all but two of the district's 67 schools met or exceeded their Adequate Yearly Progress goals under the law.

The No Child Left Behind Act was designed to improve achievement. But it has also shown us what is achievable as a nation. Educators, administrators and public officials are working together, united behind a worthy goal. Now it's time to apply the Act's successful principles to our nation's high schools.

There is not a moment to waste. Governors and business leaders are united in calling for urgent reform. Every year approximately one million students drop out of high school, costing the nation more than $260 billion dollars in lost wages, taxes and productivity over the students' lifetimes. A high school graduate can expect to earn about $275,000 more over the course of his or her lifetime than a student who doesn't finish high school; a college graduate with a bachelor's degree can expect to earn about $1 million more. Dropouts are also three-and-a-half times more likely to be arrested, according to reports. A key goal of the President's High School Reform Initiative is to address the academic needs of at-risk students so that they stay in school, improving their quality of life and that of their fellow Americans.

The Answer: The President's High School Reform Initiative

The President's High School Reform Initiative would hold high schools accountable for providing high-quality education to all students. And it would help educators implement strategies to meet the needs of at-risk high school students. The proposed program would make formula grants to states to support:

• The development, implementation and evaluation of targeted interventions designed to improve the academic performance of students most at risk of failing to meet state academic standards; and

• Expanded high school assessments that would assist educators in increasing accountability and meeting the needs of at-risk students.

Interventions would be designed to increase the achievement of high school students; eliminate achievement gaps between students from different ethnic and racial groups and income levels; and help ensure that students graduate with the education, skills and knowledge necessary to succeed in post-secondary education and in the technology-based global economy.

A key strategy would be the development of individual performance plans for students entering high school, using eighth-grade assessment data in consultation with parents, teachers and counselors. Specific interventions could include programs that combine rigorous academic courses with vocational and technical training, research-based dropout prevention activities, and the use of technology-based assessment systems to closely monitor student progress. In addition, programs that identify at-risk middle school students for assistance would help prepare them to succeed in high school and enter postsecondary education. This includes college preparation and awareness activities for students from low-income families.

The President's proposal also would require states to develop and implement reading and mathematics assessments in two additional grade levels in high school, building on the current NCLB requirement for testing once in grades 10-12. The new assessments would inform strategies to strengthen school accountability and meet the needs of at-risk students.

Additional Support

• Striving Readers: First funded in 2005, this program would be expanded significantly to reach more secondary students reading below grade level, which puts them at risk of dropping out. Students would benefit from research-based interventions coupled with rigorous evaluations. Schools would benefit from activities and programs designed to improve the overall quality of literacy instruction across the entire curriculum.

The Challenge: Promoting Freedom and Understanding

America faces a severe shortage of people who speak languages that are critical to its national security and global competitiveness:

• According to the Center for Applied Linguistics, less than one-fourth of public elementary schools report teaching foreign languages, even though a child's early years are the best years in which to learn a new language.

• Less than 1 percent of American high school students study Arabic, Chinese, Farsi, Japanese, Korean, Russian or Urdu-combined.

• Less than 8 percent of undergraduates in American universities take foreign language courses, and less than 2 percent study abroad in any given year.

While only 44 percent of U.S. high school students were studying a foreign language in 2002, learning a second or even a third foreign language is compulsory for students in the European Union, China, Thailand and elsewhere.

More than 200 million children in China study English. By comparison, only about 24,000 elementary and secondary school children in the United States study Chinese. Many students in other nations begin learning another language before they're even 10 years old. They will have an edge over monolingual Americans and others in developing new relationships and business connections in countries other than their own.

The Answer: The President's National Security Language Initiative

Critical-need foreign language skills are necessary to advance the twin goals of national security and global competitiveness. Together with the Department of State, Department of Defense and the Director of National Intelligence, the Department of Education proposes to offer grants and training for teachers under President Bush's National Security Language Initiative.

The Initiative would increase the number of Americans who speak and teach foreign languages, with an emphasis on critical-need languages. It will strengthen and refocus the Foreign Language Assistance Program, and will initially enable 24 school districts across the country to create partnerships with colleges and universities to develop critical-need language programs. Among the critical-need languages targeted under the initiative are Arabic, Chinese, Korean, Japanese, and Russian, as well as languages in the Indic, Iranian and Turkic families.

The National Security Language Initiative will also provide funding to create a Language Teacher Corps, with the goal of having 1,000 new critical foreign language teachers in U.S. schools by the end of the decade. And it will enable the cre-

ation of an "e-Learning Language Clearinghouse" and expanded Teacher-to-Teacher seminars to assist foreign language teachers anytime, anywhere.

Conclusion

Finally, I want to thank this Committee for your work on the College Access and Opportunity Act approved by the House approved last week, which will strengthen math, science and critical foreign language instruction for hundreds of thousands of students. I especially want acknowledge the work of Congresswoman Cathy McMorris for her amendment to the legislation. Her American Competitiveness Amendment makes progress on key elements on the President's proposals on Advanced Placement, Adjunct Teacher Corps and critical foreign languages. I look forward to working with you and the Members of the Senate to move this important bill forward.

Our schools helped make the 20th century the "American Century." The 21st century remains to be claimed. But Americans have never backed down from a challenge. This changing world offers another opportunity for Americans to shine, and the President's American Competitiveness Initiative and the rest of his education agenda will help set the course.

America's schools have made great progress in improving academic achievement in the early grades. But like athletes or musicians, children of all ages must work hard each and every day if they wish to compete, perform and succeed, and their schools must show them the way. The President's education agenda will help prepare the students of today to become the successful leaders-the pioneers, discoverers and Nobel Prize winners-of the next American Century.

I look forward to working with Congress on implementing these bold initiatives.

Thank you for the opportunity to testify this morning. I am happy to answer any questions you have.

Chairman MCKEON. Thank you very much.

I would like to remind the members that we will have the 5-minute limit on all questions.

I would also like to remind the members of the committee that the topic of today's hearing is building America's competitiveness and in recognition of the secretaries' limited time with us, encourage members to keep their questions focused on the competitiveness issue.

Secretary Chao, as you know, there are a number of legislative proposals that have been introduced in both the House and Senate that address American competitiveness.

Other than the President's American Competitive Initiative and keeping in mind our current budgetary restrictions, what are one or two things that Congress should do to help ensure we maintain our competitive edge in the 21st century? Instead of using a shotgun approach, one or two items that we could really focus on and get something done.

Secretary CHAO. First of all, I want to thank the House for having passed the WIA Reform Program. The Workforce Development System is a wonderful system. It is a publicly funded workforce training system, career system that helps people who are going through a very vulnerable period in their lifetime.

Currently, there are 17 different funding streams that go through these 3,500 one-stop career centers. Now, some of them are not full service, but, generally speaking. The silo effect that Secretary Spellings mentioned in education exists as well in the workforce development system. It is extremely hard for a person who is out of work to understand the various government programs that are available to them, because each of these 17 different funding streams are in silos of their own.

So one almost needs an advanced degree to be able to access the various programs. And these various programs have very strict criteria, so sometimes the very people that these programs purport to help are not able to access these programs because of overly restrictive and confusing and sometimes contradictory eligibility criteria.

So the House has certainly gone the first step in reauthorizing the Workforce Investment Act to consolidate four of the funding streams. That will be very important in allowing Governors, not the Federal Government, the Governors and people within the state much greater flexibility in helping communities and districts and municipalities to ensure that workers who need them will be able to get the money.

Second of all, the President has introduced the Career Advancement Accounts. There is a tremendous amount of money that we spend on the workforce development system. We spend billions of dollars every year. A lot of that goes to the brick and mortars of this publicly funded workforce development system. The professionals who work in the system are doing a great job, but they too feel frustrated that there are not more available to help workers.

Right now, the workforce development system refers about 200,000 people to training opportunities. We must do better with the billions and billions of dollars that we spend on this program. So the new goal is to help unemployed workers, dislocated workers access more programs and to increase the number of workers who can access training to about 800,000.

And we believe that the President's Career Advancement Accounts would empower individual workers to enable them to choose what they would like to learn, to retrain and reskill themselves so that the President's proposal basically empowers workers, and it will be a more effective way to help workers, again, access the training that they want and give them better control and a more effective way for them to access training.

Thank you.

Chairman MCKEON. Thank you very much.

Secretary Spellings, in your testimony, you noted—and last month when you convened the Academic Competitive Council you also talked about—the vast number of programs and so many of them funded at such a low level.

Do you have suggestions, ideas on combining these programs to make them more effective and be able to focus, again, with the rifle shots instead of the shotgun approach to try to really focus in on moving competitiveness forward?

Secretary SPELLINGS. Yes, sir. The Academic Competitiveness Council, the assignment I have given them is to first inventory their programs: Who is their client, who are they serving, what are the measurements of effectiveness and the like?

And we have given them a quick timeline to bring forward some of that information to the full group by the early part of May. So I am hopeful that as we work together that I will be able to provide some of this information to you.

I think these programs have grown up over time, and I don't think that we have had a clear understanding of our strategy of what is the problem we are trying to solve. Are we most worried

about kids who are going to be Ph.D.s, engineers and scientists or are we most worried about the people who need to be in these jobs that are going to require more skills, both, and what is the spectrum between those two things?

And so we don't know enough yet, and I hope to bring that to you.

I do think what I have observed, at least initially, is that there are a lot of programs. You talked about the $1 million or less, kind of, threshold that are basically pilot programs. And I think our charge is because of the vast order of magnitude of the problem is that we need to get some scalable models that can work fast and effectively. That is why the President has called for expanding advanced placement and intentional baccalaureate programs.

Those programs work, they are already embraced in many of your states, but when I talk about the rationing of opportunity, the example in my own local community, at Fairfax County, Langley High School in McLean has 22, 24 AP classes; inner city, Ballou High School, three or four classes.

And I think those are the sorts of things that we need to bring to you so we can figure out, first, what are we trying to solve, and then what are the most strategic investments we can make around the problem.

Chairman MCKEON. I want to work very closely with you on that. I have asked our staff to put together a list of all the programs under our jurisdiction on the committee, and my goal is by the time I am no longer chairman of the committee we have been able to decrease the number of programs, make the programs that we have more effective. So it sounds like we are working on the same objectives, and we can work closely on that.

Thank you very much.

Mr. Miller?

Mr. MILLER. Thank you, Mr. Chairman.

And thank you both for your testimony.

Secretary Spellings, you mentioned on page five of your statement including science assessments in No Child Left Behind, and there has been some discussion of that in the educational press.

Can you tell us what you envision happening here, and will the students be ready for the assessments, I guess, will be the question, whether or not there is comfort that the states will have a curriculum that is in place for those assessments?

I noticed that in one of the discussions about people's wish lists for the No Child Left Behind, one of the top ideas was that people wanted to expand into science and social studies, they wanted to put an emphasis there. Are they going to be in a position to do this in 2007?

Secretary SPELLINGS. Mr. Chairman, as you know, No Child Left Behind requires that states develop science assessments once at each grade span, once in elementary, middle and high school, by 2007-2008, and states are on course to do that. Many states have already adopted those standards and those assessments into their accountability system.

As you know, I am a firm believer in the "what gets measured gets done" kind of notion, and I think when we put that focus and

we put those measurements in the accountability system, that builds an appetite for focus, for change and for reform.

And so I think if we care about it—and this is actually a conversation that Representative Holt and I had earlier in this committee—is that if it is important to us, we ought to measure it, we ought to hold states and localities accountable for it, and we ought to move the ball forward on behalf of kids.

Now, are kids ready to meet those standards? I think that remains to be seen. We have focused, as you know and understand, and rightly, on math and reading, and we can't study science effectively or social studies without getting some of these baseline reading and ciphering skills. And so I think now 5 years or so into No Child Left Behind, with the phase-in, with the 2007-2008 deadline before us, we are ready to take those next steps.

Mr. MILLER. What is your sense of the—I am trying to ask this diplomatically—what is your sense of the rigor of the assessments that the states have put in place?

I mean, they now know they are going to be measured by this, and, as we know, states are concerned that they have set the bar too high or should set it lower so that they come out OK in these comparisons.

What is your sense of the states that have this in place, the rigor of the assessments?

Secretary SPELLINGS. Well, I think they vary widely, as state standards tend to. As you know, one of the, I think, very genius parts of No Child Left Behind is having the NAEP yardstick, kind of, check the quality of state systems in a way that shines the spotlight on that issue. So I think that remains to be seen.

States have not developed those science standards necessarily with an eye toward inclusion in the accountability system. It isn't required yet as part of No Child Left Behind. But I think, just like No Child Left Behind, we had to recognize and start where we are, and the only way to lift the tide is for us to begin and start to ratchet up and raise standards and raise focus over time.

Mr. MILLER. One follow-on: There is a discussion—never mind, never mind. We will go there some other time.

I am just trying to think, you know, we sit here with a sense of urgency, all of us, about what is going to be necessary for this coming generation of students to compete out there in the world, and I just worry about as we start into a new standard the rigor of that standard to make sure that they will have the tools they need to go out and have knowledge of science that is necessary. But we can discuss that later.

Secretary SPELLINGS. I would like to quickly add that that is another compelling thing about advanced placement in International Baccalaureate programs. They are high standards. They do represent a contribution toward the college affordability. They help us with articulation between high schools and higher ed institutions. And they are rigorous, accountable sorts of programs. They are doable, school people understand how to implement those, and I think that is a model that we know can work and meets the objectives, particularly the rigor, the standards.

And I have been to lots of classrooms, I know you have too, where we see so-called at-risk kids thriving and being successful in more challenging, more interesting and more relevant coursework.

Mr. MILLER. All right. Thank you.

Thank you, Mr. Chairman.

Chairman MCKEON. Thank you.

Mr. Castle?

Mr. CASTLE. Thank you, Mr. Chairman.

I thank you both for being here today.

I would like to hopefully get a question in to both of you, and let me start with you, Secretary Spellings. You mentioned in your opening testimony that you and I were at Harlan Elementary School in Wilmington. I think we are both rather impressed with the school. I have been there before, and, clearly, they have made a lot of changes that I thought were very positive.

And I can't remember the exact details, so you can probably correct me on about three things I am going to say here, but as I recall, I think it was a 6th-grade class who went into it with a math instructor. That math instructor was just that, he was a math instructor. I think he came in alternatively to teaching. He came from industry and was teaching these kids how to measure the area of a circle. We sat there and watched him for 10 minutes. I thought it was an amazing 10 minutes. Either they rehearsed that for about 2 months or he is really good. My impression is, he is really good at what he was doing.

And then we went over to a science class and watched kids deal with rocks and those kinds of issues as well, and, again, it was very impressive.

But my question relates to the age aspect of that. I mean, these were elementary school students, and they were being exposed to, I thought, really good teaching, because you had dedicated people. They didn't have just a classroom teacher teaching that, they had a dedicated math teacher, a dedicated science teacher in that particular school starting at an early age.

I am of a strong belief that we are never going to have mathematicians and scientists if we don't get to these kids early. And, boy, this is hard to handle. There is so much coming at us right now from the President and all these programs, it is hard for me to assimilate all that we are doing.

But one thing that keeps standing out to me is if we don't get to these kids early, to me, math and science need to be grasped at a relatively early age, and if we don't succeed in that, my suspicion is that we are going to have a lot of trouble converting kids in 10th or 11th grade or whatever it may be.

Do you agree with that? And if so, are we thinking programmatically about how to make absolutely sure that we are starting at an age proper to get these kids interested in it rather than waiting until they are in college or graduate school or whatever it may be?

Secretary SPELLINGS. I completely agree with you, and I think we need to do both of these things. That is why the President has called for this Math Now effort that is around elementary and middle school.

This is somewhat of a generalization, but, as you know, our curriculum in this country is a mile wide and an inch deep. We tend to do a lot of arithmetic, kids do, in the early elementary, kind of, K-4, sort of, range of, kind of, repetitive calculation type curriculum.

We are not feeding enough higher order thinking—fractions, decimals—the kinds of things that we saw in the school that we visited, Mr. Castle, and so kids fall off a cliff when you get to high school, because they have not had the embedding of this higher order of thinking, these more, kind of, pre-algebra type skills, the number line and so forth that really set the table, not only for interest but for success.

I don't know about you but I like to do things I am good at, and I think that is true of kids as well.

We saw, obviously, a very challenging curriculum and a very able and content-oriented teacher, and I think those are the two things that we must do in our elementary and middle schools.

Unlike reading, where we lack an understanding, educators lack an understanding about what are the core principles of effectiveness. In reading, we know there is the alphabetic principle, there is phonemic awareness, their vocabulary, their comprehension, all of those things. We don't necessarily have that understanding in mathematics. And I think part of our responsibility at the Federal level is to help states and school districts understand what those most effective strategies can be.

Mr. CASTLE. Thank you, Secretary.

Secretary Chao, this question is going to be really general. I apologize in advance for that. But we have a panel right after this, and we haven't heard them, obviously, but I have had a chance to pre-read their testimony, which I think is really quite excellent and they are doing some wonderful things.

But I worry a great deal about—and I have worried about this for 21-some years in this business—I don't want to say inability, but the diverse programs that the business community brings to the table, be it a Chamber of Commerce or various businesses or whatever. And they are sometimes very scattered, and sometimes, frankly, I don't think they are that effective because of that.

And I worry that we are not getting the attention of the kids or the best focus or the money that these companies are willing to put into to really help in terms of what we are doing, the coordination aspect of it, if you will. I don't mean to be critical, because they really mean well and some of these programs are excellent, but sometimes I don't think they are quite as productive as they might be.

In terms of our competitiveness structure, are we going to try to coordinate all that better, awaken what we are doing and perhaps have a unified effort in terms of the education of our young people?

Secretary CHAO. Congressman, you make an excellent point. It used to be that the workforce investment system did not include anybody from the employer community. This seemed to us to be a severe and serious flaw. Employers, after all, understand what jobs they are probably likely to have open in the coming year, and so they know what skill sets they will need as they plan their human resource needs. And to exclude them from the workforce invest-

ment boards, for example, or from any community collaborative effort to determine what skills are needed within the community seems to be very shortsighted.

So under the Workforce Investment Act of 1998 and also in the reauthorization, we have had to try to address that issue and also encourage the workforce investment system to include more employers as they plan what the human resource and training needs are within the community.

Mr. CASTLE. Thank you, both.

I yield back, Mr. Chairman.

Chairman MCKEON. Thank you.

Mr. Kildee?

Mr. KILDEE. Thank you, Mr. Chairman.

Secretary Spellings, I appreciate really the very practical and sensitive flexibility you have given within No Child Left Behind. I think that it has been received well, and it keeps the spirit and the law of No Child Left Behind but a nice sensitivity.

But I am disappointed in looking at the budget this year the freeze in Title I. In Genesee County, Michigan, which is the largest county in my district, where Flint is located, where Delphi is located, and they are closing all their plants in Flint, we look at the MEAP scores, the Michigan Education Assessment Program, look at their scores, and you find in almost all the school districts a direct relationship between the socioeconomic culture of the school district and their MEAP scores, with some exceptions.

You will find some who have a very high socioeconomic standard and not doing well in the MEAP tests and a few who are rather lower socioeconomic and are doing very well. One is the Kearsley School District, adjacent to the school district where I used to teach. And I was out there looking at the schools and I asked the superintendent, Jeffrey Morgan, why they were doing well, and this has been documented that they are really way up. He said, "One reason: Title I dollars, Title I."

And maybe they are using their Title I dollars better than others. Maybe we should send someone out there to see how it—because they really have done an outstanding job there.

But, as I said, I am disappointed that we are not increasing the money for Title I, because it really does work, most places, some better than others, as I mentioned.

Now, while I do commend you, and I have commended you before, both privately and publicly, on what you have done with No Child Left Behind, I urge you that within the administration, in the budget process, that you will try to move the bean counters to really try to do more with Title I.

And I think that is one of the roles of the secretary, whether it be Labor or Education, is to be the number-one advocate within the administration.

I have been in Congress for 30 years now, and I can recall when Dave Stockman was head of OMB, budget director, and Cap Weinberg would slap him around, saying, "Listen, don't tell me how much to ask for. This is how much we need." Of course, Cap was very aggressive and he went to his reward just recently, but he was very successful in being a great advocate.

And I think, not just you, but I think every secretary should become an even stronger advocate. I am not saying they are not an advocate but an even a stronger advocate with the OMB to try to get more for those programs that are working like Title I.

How do you deal with OMB? Do you tell them what you need or listen to what they tell you?

Secretary SPELLINGS. Well, yes, sir. Obviously, the budget development process begins actually at this time of year. We are already starting to look at the 2008 budget and what is needed going forward next year, what is most effective. We work with them on a process that they have developed called, PART, which is basically a performance-based, kind of, scoring system that talks about the effectiveness of programs.

I personally think, and that is what the Competitiveness Council is about, we need to go beyond that and look more deeply in the effectiveness of some programs. Obviously, we champion for additional resources. It is obviously done in a framework of lots of competing sources and competing agencies and departments, priorities of the President and the like, and at the end of the day, the bottom line is the bottom line.

I believe in this budget that to the extent that we have additional resources that we have focused them on our most strategic needs: On competitiveness and on, in Title I's case, an additional $200 million for school improvement. As No Child Left Behind has matured, we see the need for more intensive, kind of, state intervention, restructuring-type initiatives.

And so I pledge to you I will advocate for resources with OMB. I think if you called Josh Bolten, you would find that I do. And I think to the extent that we are in a challenging time with limited resources, we need to make sure that they are spent very effectively and very strategically.

Mr. KILDEE. I appreciate that.

Within Genesee County, the Buick factory where my dad worked is now literally a Brownfield. I was called by the vice president of Delphi Thursday morning, at 9 o'clock to tell me that all the Delphi plants in my district are closing. So in this competitiveness, we really need a good educated and trained workforce.

Thank you very much, Madam Secretary.

Chairman MCKEON. Thank you.

Mr. Ehlers?

Mr. EHLERS. Thank you, Mr. Chairman.

I very much appreciate the testimony. The two of you have the responsibility for solving one of our major problems in this country, and that is remaining competitive in the future. I want to also add that I deeply appreciate the President's competitiveness initiative. It was badly needed, and I am just delighted he has instituted that, and I am working very hard to make certain that it is fully funded in this congressional circle.

We have the two proper people here, Mr. Chairman, because as far as I can see the issues are having a properly trained workforce and having the new ideas, the research, the approach you need so that we can get product development and intellectual property rights protected.

But to me the key factor in all of this is getting teachers the proper training they need. And that boils down both pre-service and post-service. People are constantly criticizing the teachers. I have never done that. I don't knock them, because I have worked with them in the classroom, and the teachers I have worked with earnestly want to teach math and science properly. They have never learned it themselves. And, furthermore, they have never been taught how to teach it properly.

And so I have spent hours in the classroom, in my classroom and in theirs, trying to convey this. But it is a national problem, and we really have to address it because that is the core.

A couple of questions for you, Madam Secretary Spellings. Just getting at this question, first of all, you are promoting the Math Now approach of the Math Panel, both of which I think are very good ideas. As you know, under No Child Left Behind, next year we are supposed to start doing the science.

Are you going to propose, or have you begun working on a Science Now program and a Science Panel to match what you are doing in the mathematics?

Secretary SPELLINGS. Yes, sir. We intend, after Math Now, to do science next and to convene the same sort of expertise around the field of science. You have raised some of the issues about the sequencing of science and how we teach it and some of the things that are, I think, vexing to school people out there as well.

One of the things we know, as a math and science guy yourself, is that math undergirds science so strongly that it did make sense to start with math and then move quickly into science, but we do intend to do that.

Mr. EHLERS. The side benefit, of course, of incorporating that is the science helps students understand the math. Furthermore, there is interesting research that students taught science, even beginning in preschool, the simple classification skills and so forth, learn to read much more rapidly. So, actually, math, science and reading all come together if you do it right.

Another question about the math-science partnership programs. At the Science Committee hearing, both you and Dr. Bernent from NSF said the two math and science partnership programs complemented each other, and they go hand-in-glove. But yet the funding is going to your program and not to his. I think both are essential. They are different but complementary.

What do you propose we could do to help solve this problem, to keep the research effort going in his shop and keep the implementation effort going in your shop?

Secretary SPELLINGS. Well, as I said, NSF largely deals in, sort of, the pilot program arena, and I think what we need to do is gain from them a better understanding of what are the most likely effective and most scalable of those pilot programs that they operate. And so they will continue to do those sorts of things.

The reason the President has called for resources for my department is to bring that scalability, if you will. You know, you have heard me talk about the numbers. Half of our students, our minority students, do not get out of high school on time. Even kids who graduate are not prepared for college-level math or science and they lack the skills to be effective in the workplace.

So it seems to me that the raging fire is the necessary scalability of effective programs that can be brought up and stood up very quickly, as opposed to these, kind of, one-at-a-time-type programs that we are doing a lot of in the government already.

Mr. EHLERS. I just want to point out the importance of keeping their program going as well. And we will talk about that further, but it is absolutely essential.

One last quick point, and I hate to correct witnesses, but since you quoted me, I should say the correct statement is, "If you are not a nerd, you will end up working for a nerd."

[Laughter.]

Secretary SPELLINGS. Pardon me. I stand corrected.

Mr. EHLERS. Most people don't understand the difference between nerds and geeks.

[Laughter.]

But I consider myself a nerd and not a geek.

Secretary SPELLINGS. All right.

Mr. EHLERS. So I wear the plastic pocket protector, but I don't carry 13 different colored pens.

[Laughter.]

Thank you, Mr. Chairman.

Chairman MCKEON. Thank you.

Ms. McMorris—excuse me, I am looking at Ms. McCollum? Excuse me.

Ms. MCCOLLUM OF MINNESOTA. Thank you, Mr. Chair, and congratulations on your first meeting.

This is on competitiveness and we have been talking about Leave No Child Behind quite a bit, because the correlation is a good foundation to move up on. I represent Minnesota, and our business community, our college system, our political leaders, our non-profits, they have been engaged in trying to bring all children up to their best capability for years and moving forward on standards.

I am going to quote one of three articles I am going to submit for the record, Mr. Chair. Our competition isn't North Dakota and South Dakota, yet the way that we are measuring success in Leave No Child Behind, we are not measuring American children in their totality. And I appreciate the fact that term, "silo," was used quite a bit. We have 50 silos for Leave No Child Behind, because we have 50 different standards.

So we don't know how all America's children are really doing because there is not one standard to which American children and their parents know that they are being held accountable to. There isn't one standard for the business community, there isn't one standard for the colleges when they look at Leave No Child Behind school measurements.

So I think we get a failing grade in our accountability, in our responsibility of making sure that we know the direction we are moving forward in a country for accountability and standards for our children.

With 50 different measurements out there, to compare Minnesota, Arkansas, Florida and California and really know how the children from just those states are doing, we don't have a measurement.

Yes, there is a national measurement as an instrument that some states use, some states don't use. Private schools, quite often, use a different measurement.

So I think we collectively, if we are really going to have accountability, we need to get to one measurement, especially in a society that is so mobile.

I appreciate also about advanced placement opportunities for students—marvelous. I know many young adults who have been able to take advantage of that. But my school districts right now are cutting those very programs because of lack of funding for special education and because of all the underfunding and the testing requirements of Leave No Child Behind.

So what are we on the road for from this department to get to a measurement in which we really know how our nation's children are doing? There is room for improvement in Minnesota. We said that long before Leave No Child Behind, but what are we doing as a nation to truly measure this?

And then, Secretary Chao, I got a mixed message from you, and so I want to give you a chance to clear it up. I heard in your earlier testimony how excited you were that there was all this wonderful individuality and I can choose what I want to take my training dollars and move forward on.

Then when answering a question earlier, you said—one statement which I would like to clarify for the record: In Minnesota, we do have our business community as part of our workforce development; they are at the table. But you also said that we need to focus our workforce in those job areas where we know that there are jobs and get people plugged into there.

So how do you take the individual, "I am going to take my dollars and do what feels good for me this week for training," and put that square with what you also said we needed to do and that is make sure that we are training people for the good paying, livable wage jobs that are out there in the community?

Secretary CHAO. Margaret, should I answer that first?

Secretary SPELLINGS. Yes, go ahead.

Secretary CHAO. I don't find those two statements in contradiction at all. After all, we live in a democracy. People have a right to decide what they want to study, what they want to work in. What we are saying is that there are these areas in which there is a dearth of workers, so we hope, but we can't compel nor force, people to get training in a job that they don't want to get. This is America; it is a pure democracy.

What we want is to allow greater control by individual workers. Right now, we are like an HMO system. First of all, let me make it very clear: The workforce development system doesn't train anybody. The workforce development system is more like a referral system, career counseling. They contract out in some communities with skills providers. So a lot of times it is, again, like an HMO system. The person coming in looking for training is referred to a set and preexisting contract that may or may not have direct links into the employer community.

Your community, I am glad to hear, has links with the employer community. I think more and more workforce investment systems are going in that direction, but we need to include employers, be-

cause they, after all, provide the jobs and know the skill sets that they require. So, again, there is no conflict at all.

And there is also a very important role for the workforce, one-stop centers, because there will be people who will come in who don't know what they want, will need career counseling and resume writing or some assistance in knowing how to search the Net and get on some of the job sites, like Monster.Com or America's Job Bank or Career Planners. So there is a referral assistance program that the one-stop provides, which is very important. So those aren't really in conflict at all.

Secretary SPELLINGS. Representative McCollum, first, let me say that No Child Left Behind does require each and every state to participate in the National Education Report Card. That was new with that law, the National Assessment of Educational Progress. So we do have a better understanding nationally about the quality of standards.

One of the things, as you know, in education, we, at the Federal level, of course, are a minority investor and always have been and always will be. And so with states and localities paying for 90 percent of the cost of education, we believe that it is certainly right and righteous for states to set standards and curriculum for local control so we would not prescribe here to classroom teachers or to state school boards or anyone else about curriculum matters, which are within local jurisdiction.

I do think that if you are a fan of standardization and understanding or clearness of the quality of our education system, programs like advanced placement and International Baccalaureate that are acceptable, understood—everybody knows that a 3 on an AP calculus class means X—an understanding of this body of knowledge and so forth. People in the higher ed community understand that, parents understand that, and the school system understands that.

And so I think it is the right balance between local control and state prerogatives and state understandings on curriculums and as well ratcheting up the skills around excellence, standards and measurement through advanced placement and programs like that.

Ms. MCCOLLUM OF MINNESOTA. To share a point of personal privilege with you, please, for a second, I think this committee needs to find out how our states and our schools are measuring up to the standard to which the secretary just mentioned, because right now schools are measured within a state for meeting adequate yearly progress, and I believe that this committee should find out how our schools are meeting adequate yearly progress at the national evaluation instrument that is available to us. And I would respectfully request you entertain perhaps having a hearing on that.

Chairman MCKEON. Thank you.

Mr. Norwood?

Mr. NORWOOD. Thank you very much, Mr. Chairman.

We certainly welcome both of you. It is an honor that you can spend so much time with our committee, and I personally thank you for the work both of you are trying to do.

Let me start by telling you that your statements I have read carefully and thought about a lot. And you will have to forgive me

for being a little cynical. I haven't been here quite as long as my learned friend that teaches Latin over there, but I have heard these statements for 12 years, just change the names of the programs. Same statements, same thing, every year.

No thinking person, in my opinion, could disagree with what either one of you said in your statement. Clearly, our goals, as you set them out, are right. Clearly, our problems, as you set them out, are right. And, clearly, we are not getting it done.

So allow me a little cynicism here, because I really would like for us to get it done, just as I know you would too.

The programs that we have obviously have failed our children, though every year we have some other new program that, oh, gosh, we have just got to fund that this year. If we will just do that, we will get better in math and science. So we get another program.

How many programs do you have in the Labor Department and in the Department of Education that are attempting to do what we are trying to do through these new initiatives? Do you have any idea how many? Each of you, please.

Secretary CHAO. The Department of Labor has a budget of about $60 billion, the majority of which is devoted to fulfilling the needs of unemployed workers. So about $9.5 billion of that is for training.

Mr. NORWOOD. And could you tell me numbers of different programs? You speak of these little million-dollar programs all over the place, which is nothing but passing money around. All of us know that. It doesn't get the job done. If it got the job done, you wouldn't be here having this initiative.

So, Secretary Spellings, how about you?

Secretary SPELLINGS. Yes, sir. We spend $221 million. Our programs, through the math-science partnership, largely, are, like Title I, formula-driven programs, and they go on a per capita basis or to states. So they are not competitive grant programs. They flow, like Title I, as a matter of formula. We do have some other bits and pieces of programs.

That compares to $998 million spent at NIH, $997 million spent at NSF, NASA spends about $10 million more than we do, and then within each one of those there are either specific programs, like the million-dollar ones we talked about, or more competitive or block grant programs. We, at the Department of Education, largely through the math-science partnership, have a block grant type style of program distributed on a formula.

Mr. NORWOOD. So, basically, you are saying that you are here because those programs aren't working, and you want different programs, you want different initiatives, you want reform, and you want more money, and if we will just do that, then we are going to solve this problem?

Secretary SPELLINGS. I am here saying that we need to figure out what problem we are trying to solve. We need to hold ourselves accountable for some results. Four years ago, through No Child Left Behind, we said we wanted every child reading and doing math on grade level. The President has called to include science as those measurements.

And I am simply suggesting, and this is certainly what is at issue in the Academic Competitiveness Council, that we take a careful and thoughtful look at those programs and see, are they

aligned to what we have said we are going to do as a country? Do we have measurement systems that suggest that? Those things are complementary, and I don't think we know that, I don't think we have done an analysis of it.

The chairman talked about programs that were in this jurisdiction, and, certainly, Secretary Chao's and my are, but many programs exist that are not in the jurisdiction of this committee.

Mr. NORWOOD. Well, madam, should we do that first before we spend this gigantic amount of money that is going to solve the problem?

Secretary SPELLINGS. Well, sir, I think we can do both of those things, because I think we do know some scalable——

Mr. NORWOOD. We haven't done it in the 12 years I have been here.

Secretary SPELLINGS. When we support scalable models that are already accepted in schools and districts, like advanced placement, where we have high standards, accountability and measurement, and when we take those to a greater scale, I think we can do those things now, kind of, what Oprah says, "What we know for sure," we can do that.

But you are right, we need to take a look at what we are already doing and figure out what works and what doesn't.

Mr. NORWOOD. Can you get rid of them as the secretary or does it take an act of Congress to get rid of wasteful programs that obviously don't help in math and science but spend millions and billions?

Secretary SPELLINGS. There are 207 programs, 13 different agencies. Obviously, I would think there would be some latitude, I would think minimal latitude within the jurisdiction of those agencies. But I would suspect that it takes an act of Congress to get a handle on these.

Mr. NORWOOD. That is scary.

Secretary SPELLINGS. Yes, sir. No comment.

Mr. NORWOOD. The act of Congress has not done very well in getting rid of programs.

Ms. Chao, you wanted to respond?

Secretary CHAO. I just wanted to clarify one thing. The workforce investment system is very devolved, it is a very decentralized system as well. So, basically, as Secretary Spellings mentioned, it is on a formula basis as well.

Basically, Washington, D.C. keeps less than 5 percent, on average, with all of these different programs, and then it goes to the state. The Governor keeps about 15 to 35. It varies according to the different programs. And the majority of the funds goes down to the communities. So it is a very decentralized, a very devolved system.

Mr. NORWOOD. Well, thank you, Mr. Chairman.

Let me just say about my nerd friend that left, I wish he was still here, who pointed out we need to keep all those programs. That is a fast way for this not to get funded. I suggest you get in there and get rid of these wasteful programs that don't work. And people like me are going to take the assumption you are right about what you are doing and your efforts are correct and we will want to fund it. But you are going to have to get rid of the waste

in there before you are going to, I think, get the act of Congress you need.

Thank you, Mr. Chairman.

Secretary SPELLINGS. Congressman, we have four of the 207 programs at the Department of Education. You asked for a specific number; it is four.

Mr. NORWOOD. Thank you for that.

Chairman MCKEON. That is one of the problems we looked at years ago, that the vast majority of the education programs come under 39 other bureaucracies, not the Department of Education. So while we talk about education like it is all within the scope of this committee, most of the programs are outside the scope, and that really makes it tough. But we can focus on the ones we have and make them better, and that is what we are going to do.

Mr. Davis?

Mr. DAVIS OF ILLINOIS. Thank you very much, Mr. Chairman, and let me congratulate you on having the responsibility for helping move America toward solutions to some of what I consider to be its most serious and severe challenges.

Let me thank both of you for coming.

And, Secretary Spellings, it was good to see you in Chicago a couple of weeks ago. I want to personally thank you for all that you have done to assist the Chicago public schools and especially with our efforts to improve reading. And so we thank you so much.

As I was listening to the testimony, and as I have listened to the questions, I am concerned that there still exists a tremendous amount of disparity between different population groups relative to the ability to help become a part of the competitiveness that we need to have. And especially am I concerned about the fact that African-American males are seriously behind many other population groups relative to preparation in math and science, relative to achieving high education.

Is there anything in the initiative that would specifically seek to help address that issue?

Secretary SPELLINGS. Well, I agree with you completely, and I think that that data, the underperformance of that population is being unmasked because of No Child Left Behind all around the country. And so I think the first priority is to get out of denial about the fact that that exists.

You heard me talk about the rationing of opportunity that we see in many of our high schools. The 40 percent of the high schools that don't offer advanced placement, I bet you could probably predict what high schools in Chicago those are.

And so I think that is the first place we go as we start to get teachers, existing teachers who are, in many cases, not at their preference or election, teaching out of field. They are a biology teacher teaching math or vice versa, or a social studies teacher teaching math. And we need to upgrade those skills strategically in the places that need to have those core competencies most.

I think as part of the Highly Qualified Teacher Initiative, the first place I am going to look in my discussions with states about enforcing that provision is, do you have your most effective people in your most challenging environments or vice versa? As you know, it frequently works just the opposite. And so I think there are some

policy tools that we have at No Child Left Behind, and I intend to use them around that issue.

Mr. DAVIS OF ILLINOIS. Let me just appreciate that and also say that I am absolutely convinced that one of the reasons that we see such high dropout rates among minority males is that many of them, during the early stages of their development, don't see or come into contact with a single individual that they consider to be the same as they; that is, they don't see any male teachers in early childhood education who are African-Americans or in many instances Latino. And so by the time they get to 3rd or 4th grade, I think many of them have already decided that education is not really for them, that it is a female, girl kind of thing.

And I would especially like for us to take a look and put some focus in that area to see whether or not there may be some weight to change that situation.

And, Secretary Chao, one population group that I am concerned about is the 700,000 or so people who return home from jails and prisons each year. I think there is a lot of talent in that group. Are there any specific things that we are doing or can do that can help make use of some of all this talent that oftentimes is going wasted?

Secretary CHAO. This is an issue that we have been concerned about; we share your concern about that. We have been addressing this issue through the Faith-Based and Community Organizations Initiative. We were among the very first of any other departments to understand that for former incarcerated individuals, when they return to the community, they recidivism rate is much lower if the community adopted a holistic approach.

And so we partnered through Ready for Work Initiative with other community organizations that can provide the support and that formed a partnership with the training infrastructure within a community to ensure that, again, the focus of the programs is on the individual and that the individual doesn't have to go to so many different agencies and try to find out what programs are available.

But that the individual remains a focus. The services are arrayed around the individual and that there are also social support systems including important community institutions, like the church, in some instances, to help the individual. That is a program that holds, we think, at this point, good promise. We are still in the process of assessing the performance measurements, but we are very concerned about that as well.

Mr. DAVIS OF ILLINOIS. Thank you very much.

And thank you, Mr. Chairman.

Chairman MCKEON. Thank you.

Mr. Keller?

Mr. KELLER. Thank you, Mr. Chairman.

My first question is for Secretary Chao about the Career Advancement Accounts. I agree with so much of what you said, this is America, and it is great to have the flexibility of people to use the $3,000 to be trained in what they want to do. That only makes sense. You are going to be better at something you want to do as well.

I like the idea that states have some flexibility too.

I have two caveats and concerns that I want to share with you, and that is, one, I think part of that $3,000 should be held back as an incentive to give to whatever vendor does the training to place the person into a job that they stay. The other caveat is I think there needs to be a need demonstrated for those particular jobs.

This is one of those rare instances where I actually have a little experience in this issue. Twenty years ago, my first job out of college before I went to law school was working for a vendor that trained people to be photocopier technicians just outside New York City. And you remember the old Job Training Partnership Act. And the way it worked in this particular company is we would train someone in a 6-week program to be a photocopier technician, and then we would place them with a company like IBM or Canon or Xerox, and we would get $1,500 for training the person but we wouldn't get the remaining $1,500 until they were placed in a job for 30 days.

And that was my job, to make sure they were placed. And it was a powerful incentive to make sure all those people were placed. So we had a training program in New York City. I could get all 20 kids in my class placed right away. I supervise one in a small town of Kentucky called, Elizabethtown where they had pretty high unemployment, but much to my chagrin after all these 20 people were graduated, only two people could be hired in Elizabethtown because there just wasn't a need.

So because they have that incentive of $1,500 getting placed, I called every single company in Lexington and Louisville and got all those people jobs. If we didn't have that financial inventive, I don't know that those calls would have been. And so I think it is worthwhile making sure that there is a placement incentive and that there is a need in terms of the flexibility that you give to folks.

And I just want to hear your thoughts about those concepts, as you develop your criteria for who gets the $3,000 and how it could be spent.

Secretary CHAO. Well, the $3,000 will be available to eligible workers. That would include dislocated, unemployed and potential incumbent workers as well. This initiative now will not have that financial incentive at the end, but it will be extendable for 2 years.

We want to let the worker have just a greater choice and greater control over their own training, because what we have found is in an HMO system we are dictating what courses are available, and sometimes the workers may not appreciate that.

Mr. KELLER. I appreciate your frank answer. So there won't be a financial incentive for placement. If you don't have that, the next best thing is to make whoever is providing the training give you some sort of evidence that those jobs are actually needed.

For example, if you were to have a program in Orlando, Florida training people to be photocopier technicians, we could place them all pretty easily. It is a rapidly growing area, it is a service industry. If, however, some creative vendor developed a program to train people how to repair snow skis, I guarantee you we wouldn't be able to place any. And so I think there needs to be some sort of common sense criteria that a job is needed, wouldn't you agree?

Secretary CHAO. Yes. And we do have performance evaluations, but your words are another reminder to us that we really need to measure performance.

Mr. KELLER. Right.

Secretary CHAO. But we do measure on placement, on retention and on income.

Mr. KELLER. OK.

Secretary CHAO. So your words are, again, a good reminder to us all.

Mr. KELLER. Well, thank you, Secretary Chao.

Secretary Spellings, I just want to ask you about the SMART Grant Program that we have now authorized and funded. My question is about the criteria. Can you give us a sense—and I know you are still working on it—for example, roughly, what a high school student would need? Would you need 3 years of math? Would you need to pass an AP calculus class? What is it looking like in terms of the eligibility?

Secretary SPELLINGS. We are looking at exploring all those things. As you know, that passed fairly recently. We are putting the finishing touches on our discussions about that internally, because, obviously, we want to make sure that students have access to this aid.

As you are well aware, only about half of the states have designated what they consider to be a college-ready, rigorous type curriculum, and only 14 states participate in the State Scholars Program that is 4 years of math, 4 years of science, 2 years of foreign language and the like.

And so we have a disconnect between the need for financial aid and what is currently being offered in our schools. Coursework, obviously, will be one of them, but we are looking at advanced placement scores and other indicators that might be available for students as well as not just students in public school systems but students who are in private schools or home schooled, who don't particularly have access to a state-prescribed type curriculum. Those students are currently eligible for Pell aid, and we want to keep it that way.

Mr. KELLER. Would you expect the students this fall would have the criteria by then to be able to get some of the money?

Secretary SPELLINGS. Yes, sir; I do.

Mr. KELLER. Thank you.

Mr. Chairman, I yield back.

Chairman MCKEON. Thank you very much.

Mrs. McCarthy?

Mrs. MCCARTHY. Thank you, Mr. Chairman, and, again, it is a pleasure to be working with you as the new chairman of our committee.

Thank you, Secretary Chao and Secretary Spellings. It has been, actually, really, I think, a good hearing for all of us.

I guess where I want to go is obviously the achievement gap. From Kindergarten through college, we know that we are seeing with our young people that too many of our young people are beginning life with a disadvantage and they are. We have made progress, and I have seen that in my own schools, and I am happy to report on that.

But research and our progress so far show that people can and must achieve at a higher level. So I support a lot of the things that we have been doing.

You know, we talk about global economy and we talk about how global economy is shipping jobs offshore. Well, the chairman and I went to China and what we saw there through the educational system, where China, I believe, has 1.3 billion people, so they can take the best of the best and make sure they are educated, but they are also now going into the outskirts to making sure that those children even in the outskirts are getting the best education.

So from reports that we have looked at, by the year 2020, if we don't keep up with the global educational system, 14 million jobs are going to go unwanted here in this country because we are not going to have skilled workers.

In New York, last November, we knew the critical shortages that we were going to be facing, so, basically, they pulled together a Board of Regions and had an educational summit. And just by a little bit of research we saw that going back about 16 years ago President Bush I had an educational summit, and it actually ended up being a great success. The only thing is that back then it included Governors, educators. In New York, we brought the business community in, which I think is extremely important.

And when you talk about the Academic Competitiveness Council, which I think is a terrific idea, I notice that those that are taking part in it there are no business people in it. And if we are going to be competitive, the business people have to be part of the whole program.

So I guess, basically, on the background of the New York summit, they concluded that they had to focus on three areas: Early childhood education, redesigning high school model and higher education, obviously. And I think it is something that we should talk about, and I didn't know whether I would get a chance to get ask you the question, but would you be interested in trying to pull together—and I happen to think Department of Labor and Education have to work together on trying to bring this up to the President that we should be looking at education as a global fight that we are going to have to have for our young people, certainly.

And I also think when looking at remodeling our high schools and how we teach, to keep our young people in school is more important. Schools, basically—basically—have not changed since I went to school. Yes, you have got some computers in there, but as far as the teaching methods and everything else, that hasn't changed a lot.

And I think when we see our young people on computers, from my 5-year-old granddaughter who is a whiz at it, we need to look at that and how we can incorporate that.

So I am actually hoping that you might be looking to see if we could have an academic summit. But, again, the business people have to be in on it, because we have found in Long Island that if we don't bring the business people in when we are looking at changing courses, the jobs our young people are being trained for, there weren't any jobs. So we have to look at that.

With that, I will say one more thing: health care. We still have a tremendous shortage of people in the health care world. We have

done a better job bringing nurses but now we are seeing a real shortage of professors to be able to teach young people that want to go into nursing or those that are looking at career changes to go into nursing. So we need to really look into that very seriously, because now we actually have more applicants going into nursing and other health care fields and not enough professors.

So with that, I will leave it, and listen to your answer.

Secretary CHAO. Congresswoman, thank you so much for your words.

You are absolutely right about health care. Health care is one of the high-growth sectors, and it is a focus of the High-Growth Job Training Initiative. We need about 3.4 million health care workers in the next 8 years, and we need about a million nurses in the next 8 years. I know that you were involved in the Nurses Reinvestment Act. We continue to be very focused on that.

We have been working with institutions to ensure that there are innovative and creative ways to increase the supply of nurses and the capacity constraint, the bottleneck, in teaching facilities. It is one that we are trying to adjust through community colleges, which is why the second initiative, the Community College Training Initiative, is important, because we are trying to increase the capacity of community colleges to help and be part of the workforce development system for training because community colleges do a great job.

The third point about including employers, we realize that shortfall in our system, and we are trying to make a more demand-driven system so that the training that we are advising people to get will be more reflective of the skills that are needed in the community.

Thank you.

Secretary SPELLINGS. Congresswoman, let me just add quickly that the Academic Competitiveness Council was created by statue as part of the Deficit Reduction Act with the sole charge of inventorying Federal programs and describing the nature of them, the effectiveness of them.

Having said that, of course I completely agree with you, the "Rising Above the Gathering Storm" report that included Norm Augustine, Craig Barrett, the National Governors Association last year made this the focus of their meeting, Bill Gates, I participated. And so where I go around the country the places that are on the move in education reform and closing the achievement gap are the places that have very strategically involved their business communities.

And we can and should do more of that at the Federal level, but I evangelize about that all the time in states as well, because they the consumers and they are the drivers of smart policy and good reform.

Mrs. MCCARTHY. I thank you, and I hope that you would look into having a summit, because I think it is something that can be done, and I think you see an awful lot of people out there would want to be involved in it, because it is basically the business community that is going to suffer in the end.

Chairman MCKEON. Thank you. We have been called to vote, and I think we have about 8 minutes left.

I would like to ask Mr. Osborne to take his questions now, and I know the secretaries need to leave at noon and we do have two votes. So what we will do after Mr. Osborne's questions, we will thank the first panel and secretaries and then we will adjourn until the end of the second vote.

Mr. Osborne?

Mr. OSBORNE. Thank you, Mr. Chairman.

Thank you both for being here today. It is a pleasure to listen to you. There has been quite a bit of reaction to the comments regarding silos, areas within the department that sometimes are not very adequately funded, maybe some duplication, and I just want to call attention to the fact that we did pass a bill in the House called, the Federal Youth Coordination Act, and it currently has not been able to move in the Senate to this point.

What we have done is we have identified 150, 200 programs, much as you said, spread over 13 agencies, and the problem we are running into is that each agency says, "Well, we are doing a good job," but the problem is that there is no across-agency communication.

And so what this legislation does it requires members of each of the 13 agencies to have one or two representatives to meet on a Youth Coordinating Council, meet four times a year and do three things: No. 1, to make sure that each program is accomplishing its mission; in other words, there is something called mission creep where there is authorizing legislation and oftentimes the program is strayed far afield from what it was intended to do.

No. 2, is there duplication? Is the program in Labor or Justice replicating and duplicating something in Education?

And then, No. 3, are there measurable, quantifiable goals? Because what we find so often in government programs is there is really no way of assessing whether this really is working or not. And so we think this is really a good piece of legislation and this involves billions of dollars.

And it is not just a matter of saving money, it is a matter of more effectively reaching young people. And some of these are programs that have to do with mentoring, some have to do with education, some have to do with foster care. And this is endorsed by almost every youth-serving agency in the country have endorsed this legislation.

But we are having a little bit of trouble getting push from the administration, because every department is saying, "We are doing a good job," but we need coordination across departments.

That is more of a speech than a question, but I would appreciate any reaction that you might have, whether you think something like this would be workable. Because we think unless we have an overarching coordinating committee that we are not going to really get the results that we need.

Secretary SPELLINGS. Let me just quickly add that I think those three things that you named are certainly laudable goals. One thing that seems to me that is missing is I don't think we have a clear understanding, because these programs have grown up over time, of what is the problem we are trying to solve.

Let's just use this competitiveness in education thing. Are we more concerned about the half of the minority students who don't

get out of high school and don't have the necessary skills to be either employed or successful in college or are we more concerned about those Ph.D. fellows in nanotechnology who may or may not flee this country, go back home, whatever?

And I think those are all worthy programs and goals, but among the things, have we set our resources around our priorities or have we described them to each other as to what is most critical?

Mr. OSBORNE. That is a good point.

Secretary Chao, do you have any comment or reflection?

Secretary CHAO. It is always a challenge to ensure that there is no duplicative services within the Federal Government, but it is certainly something that we try to keep in mind and a goal that we try to achieve.

Mr. OSBORNE. Thank you. The only reason I bring it up is you both have authority and you have influence, and anything you can do within the administration to maybe give this a push, I think many youth-serving organizations would really appreciate it, and I think it would be a good model that would be workable.

I yield back, Mr. Chairman.

Chairman MCKEON. Thank you. We just have a couple minutes left on the vote, so I am going to thank the secretaries for being here; really appreciate it. It is just this is a thing we live with. And we will recess until 12:30, so the next panel, you have time to grab a sandwich or something because it will probably be a long afternoon.

But thank you very much. And Mr. Holt does want to ask you a question and then he will submit it for the record.

We will now stand in recess till 12:30.

[Recess.]

Mr. KLINE [presiding]. We invite our next panel of witnesses to take their seats. And I would like now to introduce our distinguished panel.

First is Mr. James W. Jarrett, vice president of Legal and Government Affairs and director of Worldwide Government Affairs for the Intel Corporation. Prior to his current position, Mr. Jarrett was president of Intel China. He joined Intel in 1979 as the company's first manage of Corporate Communications and was named a vice president in 1987. Prior to Intel, he worked for two New York-based communications counseling firms and served with the U.S. Army at the U.S. Military Academy.

Mr. Wes Jurey was appointed president and CEO of the Arlington Chamber of Commerce, October 1, 2001, having previously served as president and CEO of the Greater El Paso Chamber of Commerce since 1990. He is active in the U.S. Chamber of Commerce, serving as chairman of the Board of the Center for Workforce Preparation and serves on the U.S. Chambers Education, Employment and Training Committee.

His career in non-profit management began in 1968 and includes the Methodist Church, the Oklahoma Department of Institutions, the YMCA, the Boy Scouts of America and Chambers of Commerce.

And I think you wanted to—I would like to yield now to Mr. Bishop to introduce the third member of our panel.

Mr. BISHOP. Thank you, Mr. Chairman.

I am honored to introduce one of my constituents, one of the brightest minds in this country and one of the most enlightened and committed and generous members of our community, Dr. James Simons. Dr. Simons is the president of Renaissance Technology, which is a highly successful investment firm.

And prior to founding that firm, Dr. Simons served as the chairman of the mathematics department at Stony Brook University and taught math at both Massachusetts Institute of Technology and at Harvard University. He is the founder and chairman of Math for America, a non-profit organization that seeks to improve math education in American schools. And Dr. Simons also manages the Simons Foundation, a charity devoted to promoting scientific research.

And if I may just point out one example of Dr. Simons' commitment to scientific research. We have in our district a Federal Department of Energy Lab, Brookhaven National Laboratory, which has a cutting-edge piece of analytical equipment called, the RHIC, the Relativistic Heavy Ion Collider. The fiscal 2006 budget for the lab did not provide funds for it to operate. This is approximately a billion dollar piece of apparatus that would have lie dormant for a year because we didn't have operational funds for it.

And Jim and several of his business associates donated and raised the $13 million necessary for it to operate this year. So that very important scientific research will go forward thanks to the generosity of Dr. Simons.

So I am pleased to introduce him, and I am looking forward to his testimony.

Mr. KLINE. I thank the gentleman for his introduction and for all of our witnesses today for their presence.

Before we begin with your talks, I would like to say that any of your prepared remarks will, without objection, be entered into the record. Feel free to summarize as you see fit. We would like to, if you can, try to limit your remarks to around 5 minutes or so, and then when my colleagues and I begin questions, we will adhere to the 5-minute clock.

And with that, I guess, Mr. Jarrett, are you first up? You have the floor, sir.

STATEMENT OF JAMES JARRETT, VICE PRESIDENT, WORLDWIDE GOVERNMENT AFFAIRS, INTEL CORP.

Mr. JARRETT. Thank you for inviting me to testify today.

The issue you are addressing is a multifaceted one. It deals with a lot of different policy areas, but what I want to focus on is two topics: education and immigration.

And starting with education, if we are looking at education reform, it really has to begin with one basic thing and that is to improve the math and science foundation for our students in the United States. Math and science are really the indispensable building blocks for having a competitive society in the 21st century.

Unfortunately, as I think you are all very aware, when we compare ourselves to other developed nations, the results are not real good. U.S. secondary school students ranked 19th in math achievement and 18th in science achievement, according to one poll. And there are other statistics that are just as disturbing.

If you look at it just from a quantitative standpoint, in the year 2000, just 11 percent of American bachelor's degrees were in physical sciences or engineering, and that simply really isn't competitive when you compare it with the world average, which is 23 percent, and if you look at China, it is 50 percent.

So it shouldn't be a surprise that about half of the advanced engineering degrees granted in the United States are going to foreign nationals because they are there and can fill those slots.

So there is really no way to remedy this situation without seriously rethinking and dramatically improving our math and science education. And we have to do this from the earliest grades up.

We think we need to be pretty bold in our prescriptions. We are going to need much better training for math and science teachers and that has to be an immediate program and long-term commitment. And we will need to pay teachers competitive salaries to attract the most gifted educators.

We need to get rid of the bureaucratic and other impediments that keep qualified people who want to teach as a second career out of education.

In that regard, we are excited about the proposals from the administration on adjunct teachers and the Math Now Programs. These two programs will really help to get more qualified math teachers in the classroom, both in the short term and the long term.

Most important, we think we need to stop tolerating mediocrity. We have schools that have consistently demonstrated how to raise math and science standards, and we ought to learn from them and then figure out how to replicate that across the country.

In addition, there are some initiatives that are demonstrating success with both teacher content and student achievement. For example, the Vermont Mathematics Initiative focuses on building the mathematical content knowledge of elementary and middle school teachers throughout the state of Vermont.

Intel is funding the development of an 80-hour curriculum for teacher professional development that builds on the VMI experience. It is our intent to make this curriculum available to teachers throughout the United States.

None of what we are looking at doing is going to be easy. It requires reexamining a lot of entrenched notions about public education. Unless we start restructuring public education around better math and science, we think America's competitiveness is going to falter.

Immigration policy is the second issue I want to raise with you. Border security and illegal immigration rightly concern all Americans and it has been very much headline news these last few weeks.

There is another side to the problem that has gotten lost in the current debate. We really desperately need more immigrants, more legal immigrants or talented students from other countries. We need them to fill our graduate schools of engineering and then to keep those students here to work and build after they graduate.

But our immigration policies really do nothing to encourage the best talent to come and stay. We have far too few H1B visas; 65,000 cap just isn't sufficient on an annual basis. At Intel, for ex-

ample, we have had to place qualified foreign nationals abroad. Just recently, Intel hired a key systems engineer for a position in the United States, and since there were no visas available, we had to place that person in an offshore laboratory that is owned by Intel.

So, Mr. Chairman, polices such as these just don't make sense. Why should we encourage U.S. companies to send jobs overseas?

In the meantime, we have an enormous backlog of those seeking permanent resident status. That backlog constitutes a real deterrent to foreign graduates considering whether to remain here, particularly now that they have a lot of really superb opportunities at home. No country that wants to be the greatest competitor in the world can afford to close its doors to the world's most promising talent, yet that is precisely what we are doing. It makes no sense to invite foreign students to study at our universities, subsidize their education and then tell them to go home.

There are, of course, a lot of other drivers in competitiveness. There is investing in technology and infrastructure, tax policies that encourage research and manufacturing, a rational patent system, but I want to urge you not to lose sight of the centrality of improving math and science education and reforming our immigration system.

These are urgent needs, and I am pleased, Mr. Chairman, that you and your committee have recognized their vital contribution to American competitiveness. Thank you.

[The prepared statement of Mr. Jarrett follows:]

Prepared Statement of James Jarrett, Vice President, Worldwide Government Affairs, Intel Corp.

Mr. Chairman, Members of the Committee, thank you for inviting me to testify today. My name is Jim Jarrett and I am Vice President for Worldwide Government Affairs at Intel Corp.

As all of you know, the issues surrounding U.S. competitiveness are not entirely new. But today we see them in a remarkable context. In the past 15 years, half the world's population—about 3 billion people from China, India, Russia and Eastern Europe—has entered the world marketplace. This is a change in the global economic landscape without precedent. It represents immense opportunities for American companies. New markets like this simply don't open every day.

But it is also clear that these new markets represent a threat—a threat to our country's economic and technological leadership. While it is true that American companies have faced foreign competition in the past, we are now seeing the rise of ambitious, innovative, and extremely competitive businesses, especially in Asia. And they have these huge, increasingly prosperous populations right on their doorstep.

So how can the United States respond? That is the fundamental question at the heart of these hearings, Mr. Chairman. It was also the question posed to the Committee on Prospering in the Global Economy of the 21st Century, the National Academy of Sciences and National Academy of Engineering panel on which our chairman, Craig Barrett, served. The Committee offered a number of provocative proposals in its report, "Rising Above The Gathering Storm." Today I will focus on what I believe are the two most urgent needs the report identifies: education and immigration reform.

Education

Let's start with education. It's a huge topic, and I'm sure you will be consulting with many experts. But when it comes to competitiveness, education reform has to begin with one thing: a massive improvement in the math and science foundation we give American students.

Math and science are the indispensable building blocks in a world that increasingly depends on innovation, discovery, engineering technology, communication, and ideas. That is why every developed country is vigorously pursuing math and science education. Unfortunately, when compared to other developed countries, U.S. sec-

ondary school students ranked 19th in math achievement and 18th in science achievement.

Other statistics are even more disturbing: In 2000, just 11 percent of American bachelor's degrees were in physical science or engineering. That simply isn't competitive. In fact, it is far below the world average of 23 percent or China's 50 percent. And consider that approximately half of advanced engineering degrees granted in the U.S. go to foreign nationals.

There is no way to remedy this situation without seriously rethinking and dramatically improving our math and science education. We have to do this from the earliest grades on up.

I'm not saying anything you haven't heard before. This has been a long-standing concern of many of the members of this Committee and everyone who has been engaged in promoting greater American competitiveness. But the transformation in the global economy has made this more pressing than ever.

We need to be bold in our prescriptions. Math and science teachers will need far better training than they receive now. This has to be both an immediate program and long-term commitment. We will need to pay teachers competitive salaries that attract the most gifted educators. We need to get rid of bureaucratic and other barriers to qualified people who want to teach as a "second career." In that regard, we are excited about the proposals from the Administration on adjunct teachers and the Math Now. These two programs will help to get more qualified math teachers in the classroom both in the short term and long term.

Most important, we will need to stop tolerating mediocrity. We have, in this country, schools that have consistently demonstrated how to raise math and science standards. We ought to learn from them—and then figure out how to replicate their success across the country. These schools have some very clear identifiable characteristics like dedicated qualified teachers, consistent school leadership and high expectation for all students. In addition, there are also some initiatives that are demonstrating success with both teacher content and student achievement such as that of the Education Development Center (EDC) as well as the Vermont Mathematics Initiative (VMI). EDC's national program provides professional development for teachers and school leadership in math for enhancing content and pedagogical knowledge. VMI's program focuses on building the mathematical content knowledge of elementary and middle school teachers throughout the State of Vermont. Intel is funding the development of an 80-hour curriculum for teacher professional development building on the VMI experience. It is our intent to make this curriculum available to teachers throughout the US—giving them a solid grounding in mathematics themselves, which current data demonstrate translates into greater confidence, enthusiasm and learning for their students.

None of this is easy. It requires re-examining a lot of entrenched notions about public education. But unless we start restructuring public education around better math and science, America's competitiveness is going to falter.

Immigration

Unfortunately, our problems with competitiveness in education are aggravated by our immigration policies—the second issue I want to raise with you. Border security and illegal immigration rightly concern all Americans. But there is another side to the problem that has gotten lost in the current debate.: we desperately need more immigrants * * * immigrants who are talented students from other countries. We need them to fill our graduate schools of engineering—and then to keep those students here to work and build after they graduate.

Yet our immigration policies do nothing to encourage the best talent to come and to stay. To begin with, we offer far too few H1B visas to meet our needs. The current cap of 65,000 foreign engineers and scientists who may enter and work in the U.S. each year is hardly sufficient. In fact, it undermines our competitiveness.

In the meantime, we have an enormous backlog of those seeking permanent resident alien status. That backlog constitutes a real deterrent to foreign graduates considering whether to remain here—particularly now that superb opportunities await them back home.

No country that wants to be the greatest competitor in the world can afford to close its doors to the world's most promising talent. Yet that is precisely what we are doing. Intel's Chairman, Craig Barrett has often said—only half in jest—that we should staple a green card to the diploma of every foreign student who graduates from an advanced technical degree program. It makes no sense to invite foreign students to study at our universities, to subsidize their educations, and then tell them to take the jobs we have trained them to create—and go home.

There are, of course, other drivers of competitiveness: investing in technology and infrastructure; tax policies that encourage research and manufacturing; and a more

rational, well-financed patent system. But I want to urge you not to lose sight of the centrality of improving math and science education and reforming our immigration system. These are urgent needs and I'm pleased, Mr. Chairman, that you have recognized their vital contribution to American competitiveness.

Thank you.

Mr. KLINE. Thank you, sir.

Mr. Jurey?

STATEMENT OF WES JUREY, PRESIDENT AND CEO, ARLINGTON, TX, CHAMBER OF COMMERCE

Mr. JUREY. Mr. Chairman and members of the committee and my distinguished panel, thank you for the opportunity to testify before the committee on this important issue. I am Wes Jurey, president and CEO of the Arlington, Texas Chamber of Commerce, here representing the U.S. Chamber in my capacity as chairman of the Board of Directors of the Center for Workforce Preparation.

At the outset, we want to recognize the importance of a skilled workforce, the demand for knowledge workers, the expectation of lifelong learning and certainly echo the thoughts that math and science are critical, leading to the engineering and technology backgrounds that we are going to need. It is one of the reasons we have supported tapping America's potential to double science, engineering, math and technology graduates by 2015.

It is also why we generally support America's Competitiveness Initiative because we recognize the shortage of workers, the aging baby boomers and the declining demographics demand that we think very creatively and innovatively. And that is why we have entered into a partnership with the AARP to focus more on how we retain our aging but knowledgeable workers.

We do support the premise the Department of Labor has taken that we really do need and employer-responsive, employer-led, demand-driven, publicly funded system, and that comes from a partnership between business, education, the publicly funded system.

I am currently personally engaged with the Department of Education and the Department of Labor as they role out their new institute in which they are engaged in communities across America in supporting the creation of those kinds of strategic partnerships, and I think that program has merit.

I think we have got to recognize that we won the cold war and in the process and in the process created 3 billion new competitors for the world's resources and markets, and that is not been true in my lifetime until recently. In a document embracing the global demographic transformation, the late George Kozmetsky made note of the fact that 12 percent of the world's population controls and lives on 88 percent of the world's wealth, and those are all people in countries with projected declining populations through 2050.

That also means that 88 percent of the world's people are subsisting on 12 percent of the world's wealth, and they are all in those countries that we are now competing with, and they are all projected to have significant population increases through 2050.

If we recognize that most of the world's natural resources are abroad and most of the world's people are abroad, we still have the technology and capital and have to focus on how that market niche can be improved. Because in coming decades, and it is already

nearly here, the majority of the consumer population will live somewhere else, and our challenge will be a workforce that can become both trading partners and friendly competitors to those other countries.

What are we doing about it? Well, the Center for Workforce Preparation is deeply engaged in looking at those kinds of models that can lead to systemic change based on strategic partnerships, while the Business Education Network is involving the corporate philanthropy community in ways in which they can directly and individually impact student performance.

Our experience to date underscores the need for knowledge workers who can think strategically, solve problems, be innovative and at the leading edge of the commercialization of technology discoveries, and that demands a focus on our education and workforce systems, inclusive of public education, higher education and the public funded system.

Let me quickly bring it to the local level. We recognize in Arlington, Texas that our University Workforce Board, community college and ISD collectively spend $1 billion a year training our future workforce. That is $1 billion in one community in America.

And we quickly became focused around working with those organizations and industry clusters that were relevant to that region, and our goal was very simplistic: That as a partner to those institutions, we could help shape the way those dollars were spent in ways that would be impactful, both to the worker population and to the community.

But I would remind you again that demands strategic partnerships, and I applaud the Department of Labor for recently incentivizing that. When they announced $250 million that would go to community colleges, they also stipulated that to apply those colleges had to demonstrate they were part of a partnership that engaged business in a meaningful way as well as other higher education partners. And as you begin to frame the public policy debate around this set of initiatives, I would encourage you to think about the things you can do at the Federal level that really engender the business community's engagement at many levels.

If you think about the system we have created, there is an organizational presence for everybody but the business community. They are the only people we recruit one business at a time, and we have not thought deeply about the organizations that represent them and the role they can play in bringing the business community to the table to form those partnerships.

Thank you, and I look forward to answering any questions you may have.

[The prepared statement of Mr. Jurey follows:]

Prepared Statement of Wes Jurey, President and CEO, Arlington, TX, Chamber of Commerce

Mr. Chairman and members of the Committee, good morning. Thank you for the opportunity to testify today before the Committee on the subject of "Building America's Competitiveness" and its importance to our global economy. I am Wes Jurey, President and CEO of the Arlington, Texas, Chamber of Commerce. I was previously President and CEO of the Greater El Paso Chamber of Commerce.

I am here today to testify on behalf of the U.S. Chamber of Commerce, the world's largest business federation, representing more than 3 million businesses and organizations of every size, sector and region. The Chamber represents 2,800 state and

local chambers of commerce and trade associations with membership in all 50 states.

More than 96 percent of the Chamber's members are small businesses with 100 or fewer employees, 71 percent of which have 10 or fewer employees. And, virtually all of the nation's largest companies are also active members.

I currently serve as Chairman of the Board of the Center for Workforce Preparation, a 501(c)(3) affiliate of the U.S. Chamber of Commerce. I am also chair of Workforce Development for the U.S. Chamber's Chamber of Commerce Committee of 100 and serve on the U.S. Chamber's Education, Employment and Training Policy Committee.

The U.S. Chamber of Commerce has long recognized the important role of quality education and workforce investment in keeping business successful and the American economy competitive. We need to ensure that all students have a strong academic foundation to meet the workforce needs being demanded by employers today and in the future. We must not be complacent when all the indicators clearly tell us that our education system is not producing enough individuals with the skills needed to succeed in the workforce.

Unless we face our economic competitors and respond dramatically to the statistics that say China is graduating more than eight times as many engineers as the United States, or that only 51% of our high school graduates are ready to handle the reading requirements of a typical first-year college course,[1] then we will be failing our students and our workforce now and in the future.

With 80 percent of the fastest-growing occupations of the future generally requiring some post-secondary education, the Chamber believes our nation's goal must be to prepare our high school graduates to be "college ready and workforce ready." Many new jobs will require more technical skills and a greater understanding of math and science—subjects in which American students fail to show a suitable level of competence or even interest. Several months ago, in response to this challenge, the U.S. Chamber, along with other business organizations, began an initiative called Tapping America's Potential, which calls for the doubling of America's science, technology, engineering and math graduates by 2015.

The Chamber shares a strong commitment to fostering human talent and creativity in the U.S. and commends the administration for introduction of the American Competitiveness Initiative in the State of the Union Address. As we invest in current programs, we must also invest in the future by providing greater opportunities for math and science education and promising programs that enhance the productivity, effectiveness and efficiency of teachers and principals that will contribute to the academic achievement of our students. It is crucial that our government provide pro-growth and pro-opportunity policies to ensure that we maintain our competitive edge.

At the same time, our economy is facing an ever-increasing shortage of workers as the baby boom generation begins to retire. The American workforce is aging with no new growth of workers between the ages of 25 and 54 expected to replace them between now and 2020. In order to defy this compelling math of America's changing demographics, we must work harder to overcome the stereotypes that older workers face, finding ways to retain these valued employees, and providing educational opportunities to help them adapt to changing technologies and skill demands. Older workers can benefit, in particular, from non-traditional post-secondary educational opportunities offered by proprietary higher education schools. These schools are one of the most effective ways for working adults to pursue lifelong learning, improve their skills, and continue to be valuable contributors to economic growth. According to a recent analysis by BusinessWeek, the increased productivity of older Americans and higher labor-force participation could add 9% to our gross domestic product by 2045. This 9% increase in gross domestic product would add more than $3 trillion a year, in today's dollar, to our economic output.[2]

The U.S. Chamber is already committed to educating employers on ways to hire and retain workers age 50 and older. Through its Center for Workforce Preparation and in partnership with AARP, it will conduct four regional, one-day employer training workshops, to be held at metro and regional chambers across the country to provide solutions to assist employers in this endeavor.

In the knowledge-based, global economy of the 21st century, the U.S. Chamber believes that, working together, educators, business, and government at all levels can do better. The U.S. Chamber's 2006 education and workforce agenda is built around creating a more competitive American economy. It begins with recognition that America's place in the world is not a birthright. It was earned through the hard

[1] American College Testing, "Reading Between the Lines", March 2006.
[2] BusinessWeek, June 2005.

work, sacrifice, risk taking and innovation of our people and our businesses. Only by fully tapping these great American qualities and through policies that expand the workforce and restore excellence in education and science will our global competitiveness continue in the 21st century and beyond.

The U.S. Chamber is currently involved in a number of specific education and workforce-related efforts to ensure that businesses have access to a highly skilled and qualified labor pool. The U.S. Chamber of Commerce's Center for Workforce Preparation (CWP)-in partnerships with local chambers, businesses, government, other workforce development organizations-has been instrumental in defining and demonstrating the unique role of local chambers in workforce development and education. CWP's goals include building replicable and sustainable workforce development models; conducting and supporting research to develop more diverse and productive workplaces; and, developing and showcasing effective workforce and education initiatives.

The U.S. Chamber also is using its resources to spur local action. We organized the Business Education Network (BEN) whose goal is to build business and education partnerships that improve competitiveness and academic achievement. Through BEN, the latest developments in the areas of math and science and other curriculum content, educator development and partnership effectiveness and accountability are shared with the business and education community.

The U.S. Chamber of Commerce's network of state and local chambers and our corporate members can be the vehicle through which community solutions to the education and workforce challenge may be developed and shared. We will attempt to bridge the needs of local employers with educational institutions, including community colleges, schools using the latest in on-line technology, and various state and federal government-funded workforce programs. Our efforts will take place in many arenas and will utilize many techniques in order to create the momentum to make education reform and workforce readiness a national priority. The U.S. Chamber of Commerce's federation of state and local chambers and associations along with our member companies can be the "voice of business" through which solutions to the education and workforce challenge can be implemented and shared.

A Local Solution—The Arlington, TX, Chamber Workforce Model

Now, I'd like to highlight how Arlington, TX, through the leadership of the Arlington Chamber of Commerce, is positioning our community to be globally competitive through 4-5 general areas in which we have been active. While interrelated, I'd like to discuss these separately.

For the past 60 years, the Arlington Chamber has represented the interests of local businesses, including the more than 1,300 current members who employ 60,000 individuals in Arlington. The chamber serves as the primary catalyst for Arlington's economic development, fostering a positive business environment through the enhancement and diversification of the community's economic base, representing business on public policy and community issues that impact the ability of Arlington citizens and businesses to reach their full economic potential.

For the Arlington Chamber, the acquisition, development and retention of a quality workforce remains the number one issue for our local businesses. Education and workforce development provides the infrastructure for all of our efforts to serve the business community with its human capital issues. Other examples of the Arlington Chamber working in partnership with the community are worth noting. For example:

• We created the Education & Workforce Development Council. The mission of the Council is to "Build a quality employer's workforce by linking together resources that meet workforce acquisition, development and retention requirements."

• We created Team Arlington(tm) which is a Chamber-led coalition that advocates for resources in support of our economic issues. Partners include the City of Arlington, University of Texas at Arlington, Tarrant County, Tarrant County Community College Southeast, Arlington Independent School District, Tarrant County Workforce Development Board, and the Arlington Chamber of Commerce; and, City of Arlington, and local businesses.

• We established the Arlington Technology Incubator, the Center for Continuing Education and Workforce Development, the adoption of Triple Freeport tax exemption, and the Central Arlington Housing Development Corporation.

As the Arlington Chamber has demonstrated, the business community cannot make the changes alone and therefore communities must focus on the need to develop and sustain public-private partnerships. Relationships must be built at all levels-from the CEO to the frontline workers. There must be integration of employers with the K—12 education, higher education, adult education, publicly-funded workforce, and technical education systems to develop systemic change.

A local chamber of commerce is uniquely positioned to bring together workforce development, economic development, and education organizations. By working together communities can create new jobs in emerging industries while simultaneously tapping into a local workforce that is prepared to fill these jobs-ultimately positioning the community to compete in the knowledge economy.

The Arlington Chamber of Commerce was also selected by the U.S. Chamber of Commerce's Center for Workforce Preparation for participation in the Workforce Innovation Networks (WINs) demonstration project. Funding for this project came from the U.S. Department of Labor. Workforce Innovation Networks (WINs) is a national multi-year initiative that helps chambers of commerce make their local public workforce development systems more market-driven and responsive to the needs of both employers and workers. The purpose was to demonstrate the value of a local chamber of commerce as an effective business intermediary for workforce and education services. Employer organizations provide a structured, organized framework for employer engagement and involvement. Our communities, states and the nation are far more competitive when we include business as a full-fledged partner in the education, training, and workforce development systems.

Research by the Arlington (Texas) Chamber of Commerce in 2001 revealed that approximately $1 billion in public funds is spent each year on programs to create, mold, and shape the local workforce. In developing a four-year strategic plan, the chamber's employer members agreed that influencing how this money would be used was their top priority for workforce development. In a community where the unemployment rate is historically lower than the national average, employers indicated a clear interest in influencing the programs that could ultimately help them access qualified workers.

Representing area employers, the chamber wanted to determine its role in developing the local workforce and expanding the area's intellectual capital using already-funded programs. The key, the chamber decided, was to act as a broker of services by developing strategic partnerships with the public workforce system. The impact of this work has been considerable, from implementation of an industry cluster strategy to addressing the needs of critical-need industries, to the creation of the Center for Continuing Education and Workforce Development (CCEWD), a collaborative that allows businesses to access a range of workforce development services in a single location.

An Industry Cluster Approach

Fostering the development of industry clusters as a means of increasing the region's competitive advantage is a key component of the chamber's approach. The industry cluster concept was popularized by Harvard Business School professor Michael Porter. Simply put, it refers to a concentration of industries that benefit from co-location. The chamber works to align a range of factors that support a cluster's development including infrastructure, access to capital and technology, public policy, and the local workforce. The WINs grant provided the chamber with an opportunity to develop a critical-need industry cluster that aligned the needs of the workforce system, the educational system, and the business community within a sustainable and replicable model.

Like many cities, one critical-need industry in Arlington is health care. Some estimates indicate RN vacancy rates in the region are above 10 percent. Under the WINs grant, the Arlington Chamber leveraged their membership to form the Health Care Industry Cluster which consists of health care provider CEOs, health care deans of nearby colleges, local school district officials, and the Workforce Development Board. WINs funded a series of studies to assess the nursing shortage in Tarrant County and increase the capacity of educational programs needed to train a future health care workforce.

The Health Care Industry Cluster agreed on a three-pronged approach to address the nursing shortage. First, they focused on increasing nurses at the instructional level. Audit data revealed that instructional nursing staff are in highest demand, and the top contributing factor is lack of funds to pay Master's level nurses to become instructors. The cluster engaged students from the University of Texas at Arlington (UTA) Graduate Business School to develop a business plan highlighting the need and the benefit of having the private sector fund additional instructors. Over a dozen hospitals were involved with the development of the plan. Work in this area has highlighted the need for specific legislative change in how nursing instructors' pay is allocated—an issue the chamber is currently working to address.

The second area of focus for the cluster was to establish articulation agreements among educational institutions to better enable the nursing educational system to promote workforce development. One innovative effort has focused on a pre-RN track at the high school level. Backed by support from the mayors of Arlington and

Fort Worth, the presidents of the Fort Worth and Arlington chambers, three hospital CEOs, and the Superintendent of the Arlington Independent School District (AISD), the cluster submitted a proposal to Tarrant County College (TCC) and the AISD. Officials agreed to develop a Licensed Vocational Nursing (LVN) program that would allow Arlington's high school juniors and seniors, who are ready to pursue college level curricula, to earn dual credit LVN coursework in high school, sit for the LVN state exam at the end of their senior year, and then transition into the TCC Registered Nursing program. The program is scheduled to begin in the fall of 2006.

The third aspect of the Health Care Industry Cluster's strategy is a nursing mentoring program focused on increasing the retention rate of nursing students. Graduate students at the UTA Social Work Department interviewed deans from nearby colleges and universities and conducted student focus-groups to identify the issues associated with the dropout rates. From this, a proactive counseling program was created for students to discuss their issues and challenges and to intervene before the student drops out of a nursing program.

Strategic Partnerships to Benefit Business

The chamber realized that the local Workforce Investment Board (WIB), known as Workforce Solutions, had access to resources that could make Arlington's workforce (and therefore, its businesses) more competitive. They also knew that local businesses were in the best position to effectively shape Workforce Solutions' strategies in support of economic growth. However, they faced a challenge in that local employers weren't using the publicly-funded system. Employers don't care about the public policy of a system they don't use.

We decided that the best way to engage employers was to act as a liaison between chamber members and Workforce Solutions. They had to create buy-in among employers and sell the idea of Workforce Solutions' services. With funding from WINs, the two organizations developed a strategic partnership under which the chamber would implement employer outreach and help make the WIB demand driven. We needed to first focus on demand so that the supply side had a place to go.

Under the terms of the partnership agreement, Workforce Solutions committed to provide all necessary information about the resources the workforce system has available, as well as staff support to the chamber. The WIB also strengthened its participation in chamber activities by volunteering for chamber board and committee appointments. For its part, the chamber was able to leverage its marketing channels (e.g., newsletters, Web site, media relations) and credibility to facilitate buy-in among employers.

Center for Continuing Education and Workforce Development

A Singular Resource for Employers

An important outgrowth of the chamber-Workforce Solutions partnership was the development of the Center for Continuing Education and Workforce Development (CCEWD). The center is a collaborative partnership housing fifteen workforce service providers—including the office of the Arlington Chamber of Commerce's Workforce Development staff—that now operate as a single unit focused on meeting employer and employee needs.

The chamber's Education and Workforce Development Council spearheaded development of the Center for Continuing Education and Workforce Development, working in partnership with Workforce Solutions and the University of Texas at Arlington (UTA). Built on the UTA campus, the facility integrates higher education, the publicly funded system, and employers into an integrated model. The chamber's Education and Workforce Development Council employer members meet on a monthly basis to provide center administration with feedback and information related to the needs of the employer community. A valuable by-product of this approach is that by increasing awareness of workforce development issues and resources, council members have become effective advocates of the "employer-driven" workforce development system for the employer community. The combined impact of these efforts should not go unnoticed: Between September 2004 and September 2005, the center's market share nearly doubled (from 6.96% to 13.5%).

Because of its success in engaging employer users, the Arlington Chamber received a grant from Workforce Solutions to serve businesses by using WorkInTexas.com, a Web-based job matching service, and local one-stop career centers. The grant enables the chamber to offer the resources of a streamlined workforce system to its employer members. The chamber's work will also include a special emphasis on small and medium-sized businesses.

Through the agreement, the chamber aims to register 600 employers with WorkInTexas.com. The program focuses directly on integrating employers with the

Center for Continuing Education and Workforce Development while keeping the specific workforce needs of the employer in mind. Employers were asked to register with WorkInTexas.com and post one job opening and provide feedback on their experience. From there, staff registered employers and provided information on the resources and services offered at the center.

The chamber's efforts have been met with great success.

Replicating Success

The Arlington Chamber of Commerce is confident that other chambers can respond to members' workforce development needs and position themselves as powerful intermediaries for workforce and education systems. Following are a few keys to success:

Leverage Credibility: As an effective intermediary, the Arlington Chamber's focus is on brokering the services and resources provided by the public workforce system. The chamber, with its existing business relationships and access to information, is in an excellent overall position to broker the services and resources on behalf of the public workforce development system. Employer members have already developed a level of trust with the chamber and are therefore more likely to get involved with a system the chamber recommends.

Focus on Local Needs: In Arlington, the data clearly showed that health care was an immediate and pressing need. Thus, it became the first area of focus in the industry cluster approach and a range of solutions are being implemented. Importantly, it also provided a replicable model for additional industry clusters formed around advanced manufacturing, hospitality and tourism, and emerging technologies.

Be Demand Driven: The Arlington Chamber believes that any effective "employer-driven" workforce delivery system must fully engage local business representatives and capitalize on their leadership and expertise. For example, to engage businesses to use WorkInTexas.com, an introductory letter signed by the presidents of the Arlington and Fort Worth Chambers was sent to over 3,500 employer members asking them to participate in the pilot program.

Keep the Lines of Communication Open: Staff from the Arlington Chamber regularly provide feedback to representatives from the public workforce system. In addition to the chamber's Education and Workforce Development Council monthly meetings, bi-weekly meetings between chamber and Center for Continuing Education and Workforce Development staff members present an opportunity to discuss workforce issues and review the needs of new employers registered with WorkInTexas.com.

Create Opportunities for Employers to Access the Workforce System: Chambers have unparalleled access to employers and systems in place to create networking and informational opportunities. The Arlington Chamber workforce staff host monthly "Jobs Now" forums that give chamber members an opportunity to present their employment needs to Center for Continuing Education and Workforce Development partner organizations.

Conclusion

Through the media and other sources the business community hears the mantra-train U.S. workers; invest in the domestic workforce. We at the Arlington Chamber and my fellow members at the U.S. Chamber do just this and more. For example in Arlington, you'll find training centers at our manufacturing facilities-designed to improve technical manufacturing skills to meet our employees' personal needs. We collaborate with community colleges and vocational technical schools to provide certificate and college degree programs. We offer tuition reimbursement programs for employees pursuing bachelor's and advanced degrees. We provide corporate on-site training programs and encourage cultural exchanges from facilities abroad to enhance diversity and awareness.

American business and the U.S. economy have faced challenges before and always overcome them. Innovation has been the key to our success in the past and can be again. We are encouraged that the Committee is exploring the competitive issues in a global economy and I hope that constructive solutions can be identified.

As you consider the Committee's program of work for 2006 and begin to address the many educational and workforce problems of this country and the American competitiveness agenda, we would like to take this opportunity to offer you the assistance of the U.S. Chamber of Commerce and that of the Arlington Chamber of Commerce.

Thank you again for allowing me to testify. I look forward to answering any questions that you might have.

Mr. KLINE. Thank you, sir.

Dr. Simons, the floor is yours.

STATEMENT OF JAMES H. SIMONS, PRESIDENT, RENAISSANCE TECHNOLOGIES CORP.

Mr. SIMONS. Like everyone else, I thank you all for inviting me, and I am happy to be here.

The problem that has been raised over and over again and the problem that we are particularly concerned with is that we need our kids in America to learn math and science and they are not doing it very well. So that is a problem that has been increasing. And at the same time, the economy into which they will enter is more and more dependent. So we have two things going in opposite directions: An economy that is depending more and more on people who are technologically based and an educational system which is turning out fewer and fewer such people.

Sounds like a contradiction but it isn't. Why would that be happening? How come these two trends are going in opposite directions? We need more, they give us less? What is going on?

Well, what is going on is extremely simple. At the heart of the education system are teachers, and teachers have to know the subject that they are teaching. If they don't know the subject that they are teaching, they are not going to impart that subject very well, in some cases, not at all.

So what is happening? How come our teachers don't know these subjects anymore? Why not? Because they are being pulled into this very economy that is stimulating the demand for more and more technically oriented people.

You know, when I was a kid we had some pretty good math and science teachers. The market for people who knew, let's say, mathematics outside the classroom was there, you could become an engineer or one thing or another, but it was a modest part of the economy. There were no computers, no demand for computer programmers. There was no high-tech biology. It was a different world.

And so young men who had a predilection for, let's say, mathematics might well become a teacher. For women, it was even more so, because for a women who knew mathematics, let's say, she couldn't even become an engineer, they wouldn't let her. So if she wanted to work, school teaching was a perfectly good job. So the economy wasn't pulling these folks out, and to some extent it was actually keeping them out in the case of women.

So there was a reasonable supply of people, and I went through public school and was appropriately stimulated to learn math and science. I had some very good teachers, and I went on. Now, I graduated high school in 1955, so it is 50 years later and a lot has changed.

So now we have an economy that really needs these kind of folks, and teaching is not an especially attractive profession, at least it is not as attractive as it might be.

So we need teachers of math and science who know the subject. It is indisputable and undebatable, but we are not getting them.

Now, in any other organization, in any other part of our economy, if you have jobs that are going begging, if you have a need for a certain type of person and you are not getting them, you have

to look and say, "What can I do to make this job more attractive so that I will get the kind of people coming into the field that I need?" You can change the working hours, you can raise the salaries. You do what you need to do in order to attract these folks and to keep them there.

You don't bribe them. You don't say, "Oh, I will give you $10,000 if you come work for me right off the bat." Well, that maybe will run someone to the door, but he or she is not going to stay very long, because it is the job, it is not some impetus. You can give a kid a scholarship and say, "You have got a nice 4-year scholarship and then you will agree to teach for the next 5 years." Well, maybe they will and maybe they won't. But if a teaching job is really not very attractive, they are going to leave as fast as they can.

And we need to do the obvious thing: We need to make teaching math and science and particularly at the high school level but it is an even more difficult challenge at the elementary base, we need to make those jobs attractive enough to bring in people who know the subject. And there is no question that today we are not getting them.

So what do you do? Well, when I was younger, we discovered that we had a big lack of college professors of science and engineering. Sputnik had just gone up. Everyone was worried. I got my Ph.D. in 1961. I was one of 300 mathematics Ph.D.s in the United States. Ten years later, there were 1,500.

So the government created a program called, National Defense Education Act to address this challenge. By a fluke, I was the first person in America to get his degree under this act, I was the first Ph.D. under the National Defense Education Act. I got a letter from Abe Ribicoff, the secretary of Health, Education and Welfare at that time congratulating me.

But that program stimulated a lot of kids besides me. It worked, and we filled those jobs. At the same time, the jobs got better. When I graduated from Berkeley with a Ph.D., I was offered a teaching job at MIT. They wrote me a letter, they said, "We are going to pay you $7,500 per academic year." That seemed fine to me compared to what I was getting. Before I got there, a month later, they wrote and said, "No, you know what? We are going to pay you $9,000." I was even happier.

But that escalation in academic salaries was extremely strong in the next 10 years. So not only was the government giving a push but the colleges were giving a pull. And an awful lot of people were attracted into the field and stayed there.

Now, sort of inspired by that experience, I had always wanted—well, not always but over the last several years wanted to see something similar done for, let's say, high school math and science teachers where now we have the biggest need.

And as an experiment, and hopefully to do a service for the city of New York and also to act as a pilot, we started something called, Math for America and we built a fellowship program in New York City, and the scholarship program had two components. One component was attracting young fellows and girls and the other, rewarding existing teachers who know the subject.

It has been an enormous success. We screen kids, we take in 40 to 45 kids a year. We screen them, we give them a test. If they

pass the test, they go through an interview. One of our young fellows is here today, Alan Chang, who is sitting right there, a graduate of Dartmouth and MIT. They come in, they are plunged into 1 year of intensive pedagogy, because none of these kids have had any pedagogy, and then they go and teach for 4 years. They get stipends all along. So by the end of the 4 years they are getting $20,000 a year on top of their teacher salary.

That has attracted an incredibly good quality of kid, and as an investment, it is a good one. And what we hoped—I know I am running over my time—what we hoped, and do hope, is to use this pilot program to demonstrate that a national program can make sense.

And there is a bill now that has dropped called the MSTC Corps, Math Science Training Corps, which mimics, it copies, to a large extent, what we have done in math in New York City to do nationally. It creates a corps of people, a corps of trained, enthusiastic and well-paid people to educate our kids.

If one in five high school teachers was well-qualified in terms of subject knowledge and in this corps, it would make a revolutionary difference in the education in the United States and stimulate others to come into the field, stimulate school districts to pay more, and the extra pay that these folks would get, according to this bill, which would be $20,000 a year, is accepted by the NEA.

We met with the NEA. They are going to write a letter in support of this bill. They understand, everyone understands that we have to do something to make math and science teaching a more attractive profession or we are not going to solve the problem that we are all here to discuss.

Thank you very much.

[The prepared statement of Mr. Simons follows:]

Prepared Statement of James H. Simons, President, Renaissance Technologies Corp.

Mr. Chairman and members of the Committee, thank you for the opportunity to appear before you today. I am a private citizen who is deeply concerned about our nation's ability to maintain its leadership in an increasingly competitive world—a world in which technical knowledge largely determines the chances of success for individuals, companies and nations.

Having spent fifteen years as an academic mathematical researcher I am now the President of Renaissance Technologies, a private investment firm that uses exclusively mathematical methods to manage roughly $12 billion. My philanthropic interests, expressed through our family foundation, are primarily devoted to supporting scientific research, with a recent focus on the causes of (and possible cures for) autism. Three years ago, alarmed by the growing shortage of knowledgeable mathematics teachers in our public schools, we founded Math for America, a nonprofit organization that operates a program in New York City to attract, train and retain outstanding math teachers in public secondary schools. In doing so we hoped not only to benefit the City of New York but to create a program that could serve as a model for a federally funded effort of national scope.

In 1961 I was the first person in the United States to receive his PhD under the auspices of the National Defense Education Act. Shaken by the Soviet Union's launch of Sputnik, and concerned by a shortage of scientists and mathematicians teaching at our universities, Congress responded by enacting this program. It was an outstanding success. I may have been the first, but a great many followed, and in less than a decade, whatever shortage may have existed was surely eliminated. Based on that foundation, our military preparedness went from strength to strength, culminating in the complete eclipse of the Soviet Union as a military threat. The challenge we face today is just as real and perhaps even more urgent—to see that our nation is properly equipped to economically compete in the twenty first century.

Our competitors are not standing still. China, India and other countries are investing in economic infrastructure, particularly education and technology. They believe that these investments are the roadmap to prosperity because they are the very pillars on which our own economy was built over the last fifty years. To effectively compete we must respond, and a vigorous and imaginative federal policy must be a key part of this response. The House Democratic Innovation Agenda, championed by Ms. Pelosi and Mr. Miller, outlines such a policy. Though the Agenda calls for policy changes in five areas, I will focus on three in which I have personal interest and experience: Research and Development, Alternative Energy, and Education. I will speak briefly to the first two and at greater length on the third, the most fundamental.

Research and Development

I don't need to convince this panel that Research and Development has and will continue to contribute significantly to our nation's economy and to our quality of life through scientific advances, technological discoveries and the development of new industries. As a former professor and chairman of the Stony Brook University Mathematics Department, I have been deeply involved in scientific discovery directly, through my own work, and indirectly, through the work of my colleagues, students, and, in recent years, through the work of the various research universities and institutions on whose board I sit and whose work our foundation supports. These include MIT, Rockefeller University, The Institute for Advanced Study, and Brookhaven National Laboratory. Institutions like these are at the pinnacle of our nation's (and our world's) research infrastructure, and their continued vibrancy is crucial if the United States is to maintain its leading position. All are highly dependent on federal research funding, most notably from the Department of Energy, the NSF and the NIH. A short anecdote illustrates the precarious position in which we may find ourselves unless our government is rededicated to world scientific leadership:

Brookhaven National Laboratory is our nation's leading research center in nuclear physics. Although budgets had been steadily shaved over the past ten years, spirits at the Lab remained reasonably high because the Relativistic Heavy Ion Collidor (RHIC) had been running for the past two years and had produced spectacular results. RHIC is the world's most energetic accelerator, cost well over $1 billion, and had been many years in the planning and construction. In particular, its recent results included the discovery that the state of matter in the initial moments after the "big bang" was what is known as a perfect fluid, and not the plasma that had theretofore been conjectured. This created shock waves throughout the world's physics community and was generally considered the best result of (at least) the decade in experimental physics. Groups from all over the country and the world had participated in the planning of these experiments and celebrated the outcome. The plan for the current year was to run experiments in an attempt to finally understand the mysterious cause of proton spin, a key aspect of the fundamental structure of matter. These studies were to be made in conjunction with groups in Europe and Japan, who had spent more than $60 million over the past several years in preparing for the effort. Then something amazing happened. Due to a budgetary shortfall the DOE was unable to provide the $13 million necessary to actually run RHIC this year. This billion dollar machine, the hottest property in the experimental physics constellation, was to be shut down for twelve months, many of its personnel let go, and, while it would in theory be restarted the following year, the research on proton spin, not being part of the following year's schedule, would never be done.

The political efforts to get the federal government to change its mind were heroic but fruitless. The DOE science budget was simply too tight, and try as one might the money could not be loosened up. This was not the fault of those running DOE, whom I greatly respect, but stemmed from an overarching setting of priorities at the highest levels of government. These must change if we are to move forward.

I must say that the story actually has a happy ending. My company, Renaissance, stepped in at the last minute and put up the money. This brought joy to the Lab and to our friends overseas, both of which groups had felt left in the lurch. Moreover, DOE has promised more generous treatment of Brookhaven and other National Laboratories in FY 07. This promise must be kept if we are to remain the richest and most powerful nation in the world.

Clean and Independent Energy

There is little I can add to the welter of discussion on the issues of clean energy and energy independence except to stress its importance and to express some personal views. These should be regarded with some skepticism as I am not an expert,

although I have a strong interest in the subject and have consulted with those who are. Several points seem important:

1. Global warming is clearly under way, and, whether or not it is primarily caused by CO2 emissions, such emissions certainly don't do us any good and may well do us great harm.

2. Nuclear energy has the dual virtue of causing no emissions and being a source not dependent on foreign sources of oil. Moreover, a standardization of plant design (as the French have done) can make this source of energy cheaper and even safer than it is today. Whether the public can ever be persuaded to see it that way is an open question.

3. Coal is cheap and readily available world wide. Coal fired plants will be the obvious choice of much of the world's future electrical generation. These plants can be engineered to sequester the emitted CO2, which would then be compressed and stored underground. Unlike nuclear material, the inadvertent escape of stored CO2 would be a modest nuisance rather than a potential catastrophe. Such engineering, as I understand it, would add somewhere between ten and thirty percent to the cost of the plant. This should be able to be brought down fairly quickly. Government sponsored research and development in this area is an absolute must, as will be an incentive program to ultimately get old domestic plants converted and new ones designed to incorporate the technology.

4. In the long run, the only viable, clean, and essentially limitless source of energy is solar, and the obvious and potentially ubiquitous application is electrical generation. The problem is cost. While much work, both government sponsored and private, has been done on cost reduction, a great deal more is necessary. Again, government sponsored research in this area is a must. An example is the Helios Project at the Lawrence Berkeley National Laboratory.

5. The majority of petroleum consumed in this country and around the world is for transportation, primarily cars and trucks. Given the economic growth rates in Asia, the numbers of these will grow rapidly. The obvious alternative is electric powered vehicles, and the only impediment to their wide spread deployment is inadequate rechargeable battery systems. Much work has been done in this area, and reasonable progress has been made. I myself have made significant private investments in the field. Nothing else has a near term chance to substantially reduce the world's need for petroleum. In my opinion government R&D support for rechargeable batteries should be at the top of the list of energy priorities.

Education

Even more important than either of the above is a technologically-prepared workforce. At my own company, for example, fewer than half of our more than 60 PhD's were born in America, and the vast majority of technologically based companies are in the same boat. The leading edge of our economy is increasingly based on importing scientifically trained people and exporting scientifically based projects. This avenue is not available to our nation's military and intelligence services, whose present and future need for workers with degrees in math and science can only be filled with home grown product. It is absurd, and ultimately contradictory, that a country which aspires to maintain world economic leadership be so grossly deficient in producing the very workers who can make this possible.

At the heart of the issue is the dwindling supply of well-prepared high school students prepared and inspired to go on to receive university training in these demanding fields. And that in turn is primarily due to the dwindling supply of public school teachers who are knowledgeable in math and science.

The bleak story about math and science achievement among American students is well known, and a fact sheet outlining these issues is attached. Moreover, I am sure you are each acutely aware of the math and science teacher shortages and the consequent number of out-of-field teachers in our classrooms. The sad truth is we are not educating our children for the 21st century.

It goes without saying that to teach a subject one must know it, and those who know math and science are increasingly lured away from possibly teaching in the class room by more lucrative positions in the very economy whose future we are hoping to ensure. The answer is simple—we need more and better teachers of math and science and to get them and keep them we will have to pay them more. Regrettably, teacher pay is not tied to market forces, therefore incentives from the federal government, first to attract more qualified individuals into math and science teaching, and then to keep them there seems the only practicable option.

As a first step in this direction we created Math for America and the privately funded Newton Fellowship program, restricted to mathematics, which we hoped would serve as a pilot for a future federal program covering both math and science. Our goals were to improve student achievement in the short term and build life-

long appreciation for the subject. We assumed, and research showed, that teacher content knowledge is essential, and that became the gating criterion for selection to our program. We use standardized testing to ensure that all of our Fellows have a deep understanding of math. Of course, we recognize that deep content knowledge, while necessary, is insufficient, so a second key component of the program is pedagogical training, mentoring and professional development to help our teachers grow as professionals. Through a cohort model, they receive support from each other and the program.

With a prestigious Fellowship program and appropriate marketing we were certain that we could attract top candidates to teach math in New York City. In fact, sitting behind me here is Alan Cheng, one of our Newton Fellows. Alan has an engineering degree from Dartmouth and a master's in technology and policy from MIT. He has the content knowledge to teach math, knows how to relate math and science to "the real world" and is truly interested in shaping children's lives. He is a motivated, smart, talented young man. In New York City he could go to a financial, engineering or consulting firm and earn at least twice the salary of a public school teacher. People like Alan—the best and brightest—follow their hearts and go into teaching, but typically don't stay. The statistics are dramatic. Smart, talented math and science teachers leave the profession at nearly twice the rate of their peers. When asked why, they most often cite low salaries. We hope that Alan will stay and we have provided, as the third key component of our program, a financial incentive. A full scholarship to earn a master's degree in education and, over the succeeding four years of teaching, annual stipends, starting at $11,000 and ending at $20,000 are provided as a supplement to their regular salaries.

I am confident that the MfA program in New York City will be a success, but one philanthropic effort in one city is clearly not enough. The approach we have taken in New York, seeking out individuals with high level skills, training them and paying them well to work in our schools, must become national policy for us to have any hope of long term success in the technology race of this new century.

Before stepping down I would like to point out that there is now a bill before this House, and before the Senate as well, which is designed to affect the program we have in mind. It is called The Math Science Teaching Corps Act (MSTC), and was introduced in the House by my good new friend Jim Saxton and in the Senate by my good old friend Chuck Schumer. It is also co-sponsored by my latest friend, Ruben Hinojosa, a member of this Committee, whom I am pleased to hereby thank. MSTC also has the verbal support of the NEA and AFT, both of whom recognize the need and acknowledge the appropriateness and the timeliness of such a program.

Conclusion

Science and technology are the drivers for the world's economic prosperity, and America must not only keep up but take the lead. To make this happen, our federal government, and particularly the Congress, has a vital role to play and the House Democratic Innovation Agenda offers a strong model to follow. Almost fifty years ago the NDEA and other congressionally sponsored programs provided a magnificent response to the Soviet challenge. This time the challenge is even bigger, and I am confident Congress will come through once more.

Thank you.

Chairman MCKEON [presiding]. Thank you. I apologize for being late.

Mr. Miller?

Mr. MILLER. Thank you very much.

Mr. Jurey, we met with Mr. Barrett when we were putting together our innovation agenda for the Democrats and we took his suggestion of stapling the green card to the diploma. We think it makes an awful lot of sense in terms of keeping talented people here. And, hopefully, at some point, in this larger debate, we will make a decision that we want an expedited means for these students to stay here when they get their degree.

Mr. Simons, thank you very much for your testimony. There has been a lot of fits and starts about how we get highly qualified teachers into the classrooms, and there is obviously a lot of energy thinking about that. I have a very comprehensive bill that came

out of Lou Gerstner's teaching commission proposal that has a long sustainable effort to try to improve the profession.

I was interested when I met Alan this morning in the office that he plans a career in teaching. He is not suggesting that he is going to successfully complete your program and then maybe do this for 5 years and then go off and be an engineer or use his talents elsewhere. He didn't make that lifetime blood pledge but he said that was his intention.

It is interesting to me that he thinks that the market will be able to offer him that opportunity to make this a career in education. What about the other candidates that you have talked with in this program?

Mr. SIMONS. Well, you know, they are all very young, and so they are enthusiastic and I think most of them assume they are going to make a career in teaching. But after they have been at it a while, we will see. It is one thing to get folks like Alan in and to keep them in for 4 or 5 years through the various inducements.

The bill that we are proposing has a second component where experienced teachers can also come into the corps if they demonstrate sufficient knowledge of subject and other good qualities and will also get stipends on top to reward them and to keep them in the classroom. And a boy like Alan, if he were an entry member of this MSTC Corps, after 5 years he could reapply. He would apply as an experienced teacher and if he was good enough, as I expect he would be, he would become a member for another 5 years. So there is a follow-on, at least we imagine a follow-on.

But things can change and maybe the rest of the folks will wake up to understand that these folks need more pay and better conditions. And maybe by the time Alan's 5 years have gone by everyone will know that and the problem will be solved. I tend to doubt it, but it is possible.

Mr. MILLER. Well, I find it encouraging because it is a piece of evidence that suggests that if you really change the profession and you make it more professional, if you will, if you give teachers greater control, if they have a sense that they are going to have some say and some participation in creating a different workplace, that they see this as a longer-term commitment. If they are going into a system where they are going to be regimented and not have those opportunities, it seems to lower their horizon about staying there. So it suggests that we have other changes that need to be made in that environment.

Mr. SIMONS. Yes, and the better people we can attract into the job, the more likely those changes will be made, because you will have stronger voices arguing for those changes.

Mr. MILLER. Well, that is the critical mass that you were talking about, if you could get one in five people in this situation.

Again, in the hearings we are now able to really look at the value added by highly qualified teachers and obviously a student that is able to spend 3 years in a row with a highly qualified teacher has a much different outcome than the student——

Mr. SIMONS. No question.

Mr. MILLER [continuing]. That doesn't get that opportunity.

Mr. SIMONS. There is no question.

Mr. MILLER. So that is very encouraging what your program is doing.

I would just also make a comment that there is a joining here. I didn't know you all were going to be on the panel, but in our discussions with Mr. Barrett, the CEO of Intel, we were looking for the pull. If people were going to become—if we could create new innovators and they wanted to participate in that part of the economy and be out there, what was the pull?

And he recommended, as you do, that we really have got to look and make a major investment in alternative energy resources, that that would be the next generation of drivers within the high-tech field if we really put our minds to it as a nation, that he saw that as a real opportunity to give people a place to land, if you will, after they acquired this set of skills, that that would be an expanding base for American employment.

Mr. SIMONS. Well, given Mr. Jarrett's comment about the paucity of H1 visas and how dependent they are on H1 visas, one would think there are a few places to land for American boys and girls right now if they are qualified. Half the people we hire aren't H1 visas. We are a little smaller than Intel, I have to confess. But, nonetheless——

Mr. MILLER. About as profitable, though.

Mr. SIMONS. Well, we are pretty profitable, I have to say that. But half of our technical employees come in with H1 visas, at least half. So it is very hard to find well-qualified people. So there are jobs now that are going to—well, in any event.

Mr. MILLER. Well, I think what is clear from this panel of testimony, Mr. Chairman, that obviously we have to address a whole range of bottleneck within our education system, within our economy, within our immigration system, within our R&D policy to make this work and certainly to make it work in a timely fashion that many of you who are the experts in this area tell us we need to do. This isn't one where we can just do it at our own convenience and our own timeline, because there are other timelines out there that are very, very competitive with our standing in the world.

Thank you so much for you testimony.

And, Mr. Chairman, I think you said that their statements could be put in the record in their entirety. Thank you.

Chairman MCKEON. No objection, so ordered.

Mr. Bishop?

Mr. BISHOP. Thank you, Mr. Chairman.

Let me start with a question for Mr. Jarrett. My background is higher education. I was a college administrator for almost 30 years, and we had an uneven experience with adjunct faculty. Some were outstanding, others were just, sort of, phoning it in.

And I guess my question is, do you see the push toward more adjunct faculty in high schools? Do you see that as, sort of, a temporary strategy while we develop, hopefully, a larger and better qualified cadre of full-time teachers or do you see this as part of a permanent solution?

Mr. JARRETT. I think the experience will probably continue to be uneven. This is a new area, and people are going to have to feel their way along and see what works and what doesn't work. And we will see how big the market really is of people who really want

to go into teaching as a second career, either for a period of time or permanently.

But as you know, there are a lot of bureaucratic barriers, a lot of professional barriers that are there to prevent them currently from making this kind of step. I think that is what really needs to be addressed first.

But how successful this will be long term, I think we are going to have to work our way through it to see how it—it seems like a good idea now.

Mr. SIMONS. We have a little bit of evidence on this, because we advertise widely to get applicants for the MSA Program, and we had hoped that we would get a reasonable number of these folks as career changers. But I think it is less than—maybe it is of the order of 5 percent.

The great, great majority of people who apply to come in to this program are people right out of college. We do get a few career changers. We had a gal from Morgan Stanley, I think, who, there for 20 years, got bored, and she has been terrific. But they are few and far between.

Now, it is a New York City experiment. It may not be applicable, necessarily, around the country.

Mr. BISHOP. Let me ask Dr. Simons a question. No Child Left Behind is, sort of, the central effort on the part of the Federal Government to improve K through 12 education, and it requires that there be a highly qualified teacher in every classroom, although I think all of us would agree that we haven't gone as far as we could to make that possible.

We are going to be reauthorizing No Child Left Behind in the next year or so. It has a significant emphasis on testing, lots of tutoring. And picking up on your comment that the central element in education, obviously, is outstanding teaching, would you be encouraging us as we reauthorize No Child Left Behind to swing the emphasis away from testing and away from measuring the performance of subgroups and invest more Federal resources in seeing to it that school districts can hire more qualified teachers?

Mr. SIMONS. Well, I am not a good person to answer that question, because I haven't studied the value of some of these parts of the No Child Left Behind, in particular the measurements and the testing. I generally think that measurements are pretty good. If you are going to have a program, it is pretty nice to be able to measure how far you are getting.

It is clear we need money to improve the knowledge ability of teachers in math and science. That is clear. Whether that money should come out of some other area, I can't really comment on. Sorry.

Mr. BISHOP. Thank you, Mr. Chairman. I yield back.

Chairman MCKEON. Mr. Holt?

Mr. HOLT. Thank you, Mr. Chairman.

And I thank the witnesses. I would like to make a couple of comments to elicit your reactions, but then I have a more directed but still general question for Mr. Jarrett.

I would follow on what Mr. Miller has said as well as what Mr. Bishop has said and say that one of the things that has concerned me, as a product myself of the National Defense Education Act, is

that we run the risk of repeating a fundamental mistake that we made then, which was to develop a generation of scientists and engineers, the likes of which the world has never seen, and left behind 80 percent of the population. I think it is critically important that we adopt the approach of science for all students, science for all Americans, and I think that can be done without compromising excellence.

Furthermore, I think that we need not—and, of course, that is one of the reasons that I think that in No Child Left Behind science should be part of the assessment and should be part of determining adequate yearly progress. Otherwise, science becomes only for the future scientists, and I think that is dangerous for our society in this day and age.

Furthermore, again, as a product myself of the NDEA, I think what we need is not just a new NDEA but we really need a national commitment to science. And part of that includes the kinds of things that followed the launch of Sputnik in addition to NDEA so that students did feel that they had an avenue to follow, that there was a reason to study science. And the best candidate for that these days is not a space race but an energy program, which, defined broadly, would include such things as smart transportation and so forth, I believe.

The effort so far from the administration are, in many ways—the rhetoric is good, but I am a little concerned about the adjunct teacher program, as Mr. Bishop is. I have been a highly qualified scientist. I have also been a teacher. One does not imply the other. And I hope we are not heading in the direction of just plopping down scientists in the classroom and saying, "Now you are highly qualified," because it won't work that way.

I hope we recognize that these scientists that we bring in are in many cases novices in the classroom. They probably should be regarded as provisional, in some sense. And a great effort should be made to integrate them into the teaching profession. And although I am pleased to be a co-sponsor of the recent legislation, which allows for movement in this direction, I think what we did was just a drop in the bucket.

Which leads me to my final point, and this is really a question for Mr. Jarrett. I have served with Craig Barrett on the Glenn commission. I commend him for his public service, which I think is also probably a real service to his stockholders. But you, speaking perhaps with him or for him, say that we need to be bold in our prescriptions, we need to stop tolerating mediocrity, we need to, yes, staple green cards to the Ph.D. diplomas.

But what do you mean by being bold? I just hear lip service from all over this town to—there is a lot of talk about competitiveness, even in the State of the Union Address, but I don't see it in the numbers, in the budget that follows. I see no movement in the recommendations of the, "Rising Above the Gathering Storm," again, which Craig Barrett assisted in, beyond lip service.

So I am looking for these bold prescriptions with bold action to follow. Any comments on any of those things. I see my time is expired and I have rambled enough. Thank you.

Mr. JARRETT. I guess if I can just respond a bit. One of the tendencies in government is, "Let's go study it again," right. And the

point that Craig Barrett has made several time is, this problem of teaching math and science effectively doesn't require yet another commission. There are a lot of good models out there, inside the United States and outside the United States, about how to do this effectively. We need to get on with it and not waste additional time studying, studying, studying before we go off and try some things. So that is one—if that is bold, we will call it bold, but that is one of the things we need.

I think we also need to make sure that in the area of measurement, that faced with the problem of kids who aren't measuring up, there has been a tendency out there to, "OK, let's dumb the tests down or let's push out some time before we start measuring people so that more kids get a chance to pass that test." That is not going to solve our problem. I mean, we need to get on with it and learn what that measurement tell us and then deal with it and not dumb down the tests or push out the time before we start testing.

Mr. HOLT. Thank you.

Mr. Chairman, with your permission, I would just insert a thanks to Dr. Simons for his effort to help the Relativistic Heavy Ion Collider move along.

Mr. JARRETT. Mr. Chairman, I am going to have to excuse myself.

Chairman MCKEON. Thank you very much for being here. Drive carefully, and I hope you get your flight.

You know, I think we have all—I missed most of your testimony and I apologize for that. The competitive issue I know I have been hearing about for years. People have been telling me, "You have got to go to China, you have got to go to India, you have got to do this and that." And we went to China last year and I think it was a very productive, we learned a lot, and we have all looked at China, Inc. and the world is flat and all of the stories.

But I want to get your response to an article that was published in The Washington Post by Robert Samuelson entitled, "The Phone Science Gap." I just want to hear what your response is to this.

He talked about the fact that American colleges and universities were graduating more students in computer science than ever before. He pointed out that graduate science and engineering enrollments were at an all-time high. He noted that per million in the United States graduate slightly more engineers with 4-year degrees than China and three times as many as India. And then the other figures where we talk about we graduate 40,000 engineers and they graduate 4 million, he says that is not apples to apples; it is different kinds of engineers.

Just to play devil's advocate on this, because I have been pushing this hard, but what is your response to something like this? Is it real?

Mr. SIMONS. Are you asking me?

Chairman MCKEON. Both of you.

Mr. SIMONS. Well, I didn't read Samuelson's article, so I can't comment on it. But I think the difficulty in hiring Americans to do the jobs that are at the leading edge of the economy is evidence enough that there is some kind of shortage. There is certainly a shortage of Americans. If we just say we are going to hire, as we did yesterday, "OK, we are going to hire five more researchers.

They are all going to have Ph.D.s, they are all going to be physicists or mathematicians or astronomers, the kind of guys we hire." Now, I know damn well if two of those are U.S. kids, it will be a surprise. So there we are.

Now, so far we are saved by people immigrating. The H1 Program could be expanded, that is great, but they are leaving countries which are growing at a great rate. I built a building in China on the campus of Chingwa University. I agreed to do that 5 years ago. I went over there, spent some time with their Institute for Theoretical Physics, a new institute. Chingwa is in Beijing. It is a very good university. A friend of mine, a Nobel prize winning scientist, is the head of that, Frank Yang.

I like Frank, I like what he was trying to do there, and I said, "Well, what do you need?" He said, "Well, what we would really like is we can't get visitors, we can't get visitors, we don't have accommodations for them. We can't put them at the fancy hotels for a semester." This is visiting professors and so on. It is too expensive to put them in a fancy hotel, and, frankly, the typical Chinese accommodations aren't satisfactory. It is too crude.

So I said, "Well, we will build some apartments." Oh, that is really what they wanted. OK. So we build a small apartment building. Half of it is done; it will have 15 apartments. They came out beautiful. They opened it in October, and so I was there for the dedication. Now, 4 years have gone by and what I said was, I said, "Well, this is great, but I will tell you, in 10 years I am going to come and ask you guys to build us an apartment so that we can get more Chinese visitors to America." Because they are making such progress that after awhile this flow of Chinese kids or Indian kids to America is going to slow down, because there will be plenty for them to do there. Those wages are going up.

And so it may be that for the moment we are OK with imported kids and we are OK with exported jobs, because an awful lot of technical projects are now going, let's say, to India, software projects. They do a darn good job, they charge a fraction of the amount. So that is OK for now, but it is not going to last. Their wages are going to go up, their kids are going to stay home, and we will be left without that edge. So that is how I would respond to Mr. Samuelson.

Mr. JUREY. Well, I would give you this take. I think the broader issue is that we are facing unprecedented global competition that we didn't anticipate 20 years ago. We really did create 3 billion new competitors for the world's markets and resources when we won the cold war.

And if you begin to look at what is really happening, we can argue all we want about how many scientists who produced or how many engineers who produced, but the reality is that 20 years ago we didn't have countries like India and China literally competing with us. We really were the primary economic engine for the world. And that has changed, that paradigm has shifted.

And it means we are going to have to think, as you put the policy framework in place, about what that total paradigm shift really means to America's competitiveness beyond making sure that we have kids well-grounded in math and science. Because I do believe our primary competitive niche today is our ability to be innovative,

to be bold, to be able to be at the leading edge of commercialization of technology.

Now, the industrial revolution was literally built around the fact that we invented technologies that created the assembly process. And then the Internet has accelerated where we are going today. And yet we haven't thought a whole lot about what that means in the broader sense. And so we can create 60,000 engineers or 600,000 engineers, but they are still facing a very different level of global competition.

When I was in El Paso, I was confronted with the fact that shortly after I took that chamber opening, I was going to lose 11 percent of my entire jobs, because the garment industry was absolutely moving offshore. And I had picketers outside the chamber wanting to know what we were going to do about it in an era of NAFTA, and I finally invited them in and said, "I don't know what to tell you when a company trying to remain competitive in a global economy can sew the same number of garments per hour and pay 50 cents to get them sewn and they can no longer afford to pay $12 an hour to sew them here."

And is the challenge is for you not to try to cling to that job but for you to try to retrain for a higher, better-paying job. And that was my first real thoughts, frankly, about how we are going to have to think globally, because the jobs are going to change that our grade school children are going to compete for by the time they become educated. And a lot of those jobs haven't been invented yet, but I am reasonably sure they are still going to be based on kids who need to be highly educated in math and science. And that starts very early.

Educators predict whether a kid will make it by the 3rd or 4th grade; they don't wait until high school. And when I got an education degree, they told me that at age 10 a kid had 90 percent of what he was going to take into adulthood already firmly formed. And so when you start thinking about how to structure and incentivize, I think we have to take into account that we are going to be for a long time in a very different kind of global competition. Because China is using energy at an unprecedented rate.

We have talked a little bit in this hearing about how the Science and Technology Initiative, going to the moon energized America. Energy is going to be critical. We are going to be competing for scarce global resources and energy, and it may be that that is one of the directions that we have to take. We need to become the world's leader in energy innovation. We need to become the world's leader in finding the new technologies, the new ways. Israel tried to solve a water problem and became one of the great exporters of water technology.

There is no reason we can't try to solve an energy problem and reenergize America around science and math and the skills it takes. And you begin to attack air pollution, which is a health hazard, which adds to the cost of health care, which begins to spill in a lot of different ways.

And I guess I am trying to get you to think a lot more broadly about America's competitiveness than simply whether we will incentivize more math and science teachers. I don't mean to minimalize that, I don't mean to take away from it; I only mean

to attempt to really broaden the debate, to think about the global environment we are going to be competing in for a very long time and the real shifts that are taking place that aren't going to shift back.

Mr. MILLER. Mr. Chairman?

Chairman MCKEON. Yes?

Mr. MILLER. Just if I might, it is interesting, with all of the people that we discussed our innovation agenda with, and I read the article in response to all of this, that there was just no evidence from companies, as Mr. Simons said, people were not able to find people sufficient in-country to do this work. We just met with Bill Gates the other night and he went all through this again.

And I know there are people who say, "Well, there are all these engineers that are unemployed and the rest of that and somehow you don't really need to make this effort." But, boy, you sure don't hear it within the community of those who are employing and looking for leading-edge people in these various fields.

So I think we are on the right track, but the trend lines at the schools of engineering and the rest of it are all in the wrong direction at the moment for American students.

Chairman MCKEON. You know, I have the same experiences, but I did talk to a couple of companies the last time I was home that said they were able to get people. So that is why I wanted—sometimes you feel like we are inundated with information here, and when it comes from different sources and it says different things, it is like we want to go in this direction but then we wonder is that really the right direction. That is why I wanted your response, and I appreciate Mr. Miller's response.

I feel like we have been moving in the right direction, but I wanted to take advantage of your expertise while we have you here.

I think that we still need to relook at all the different programs we have and try to gauge their effectiveness. Fortunately, throughout the country, people aren't waiting for us, because I agree with Mr. Holt, a lot of times in this town there is lots of talk. But as I go around visiting schools, I see lots of exciting things happening, and people are moving to try to solve these problems.

They are not waiting for us to pass some major piece of legislation and then try to get it through the regulators and try to get it down to the end of the row and then have them try to interpret it and then all of a sudden they say, "Oh, gee, now we can do something." They are not doing that. They are out trying to educate and train people. Some, however, are more creative and are moving quicker than others.

We had a young man sitting right here a few years ago in one of our hearings, talking about just because you graduate with a teaching degree does not necessarily mean you are qualified to be a teacher, just as having a great science degree does not mean you are qualified to be a teacher.

And he was a young black man that was teaching in this area, and he said they hired him, put him in the classroom so he could teach these 2nd and 3rd graders to read. After 2 years, he was ready to quit, because he was not successful, he was not able to teach. Hopefully, some bright principal got hold of him, got him

into the right teaching. Now he is really enjoying his vocation and he is successful teaching these kids how to read.

I see teachers that are doing a fantastic job. I see some that are not doing so well. One of the reasons they are not is they haven't been taught. Another reason they are not is they are burned out or they are protected. There is no way they can lose their job and they are just tired of it.

Now, this young man here, I hope—he is the one you were talking about that is going into teaching—I hope that he finds that he likes it. One of the concerns I have about training teachers is we run them through 3.5 years of university and then we put them in student teaching. Sometimes they find they don't like kids.

[Laughter.]

They have already invested 3.5 years, so they have to become teachers. Why don't we have them maybe visit a classroom when they are a freshman and they see what they are going to have to put up with and see if they want to do it.

I am glad you said the NEA supports this proposal of adjunct, because when I was on the school board we tried a mentor teaching program and we were going to give a $2,000 stipend to some of the better teachers to help mentor some of the other teachers. The union fought us on that, and we finally got it in, but it took a long time.

And there is this trying to keep everybody at the same level, and why should just because he took his 4 years in science and I took my 4 years in English, why should that person be paid more to teach than I am? So there is a lot of this kind of stuff that we need to deal with.

Mr. SIMONS. They seem to have gotten that at the NEA. I was quite surprised, as I went into this meeting with their executive director and the staff——

Chairman MCKEON. I am very hopeful that they have——

Mr. SIMONS [continuing]. And they warmed to it, and we are about to get a letter from them supporting what we are doing and so on.

Chairman MCKEON. I was talking to Mr. Miller earlier—and this is not a hearing, now we have kind of evolved to a fireside chat, which is good—but I was talking to Mr. Miller earlier about some new union leadership that has also expressed these same kind of things. And I think everybody realizes, or not everybody, but people are coming to realize things are different, and we need to react differently.

And it is not really going to affect you, but our children and our grandchildren are going to—if we don't wake up and if we don't meet the challenge, they are going to have a different lifestyle than we have been able to enjoy.

Mr. Holt?

Mr. HOLT. Thank you, Mr. Chairman. There are two, I think, important comments I would like to make.

One, as a co-sponsor of the amendment that is leading to these adjunct teachers, and someone who has had extensive discussions with established teachers as well as teachers organizations, I wouldn't say that they wholeheartedly embrace the idea of the adjunct teachers. What they embrace is the idea of bringing content

expertise into the schools as long as we do it in a way that recognizes the need for training in pedagogy and recognizes the need to integrate these people into the teaching profession.

Mr. SIMONS. I would just point out that our program in New York, the first thing the kids do is spend 1 year—and that is what Alan is doing now—in a pedagogy program——

Mr. HOLT. That is right. And it certainly can be done that way.

Mr. SIMONS. Pardon me?

Mr. HOLT. It certainly can be done that way.

Mr. SIMONS. It can. It can be done, yes. And then they go out and they know the math, they get the pedagogy and the reinforcement and they practice teaching and all the rest, and then they go out and they do great.

Mr. HOLT. The other comment I would very much like to make as sort of a coda to today's discussion and particularly since we have a representative of the Chamber of Commerce here, is we mustn't forget that in China, for example, 50 percent of the imports that come from China are not Chinese companies that are competing against us. They are from foreign-owned companies using the means of production in China to produce things and send them back to us. And so we have to understand that this is the result of conscious decisions by American companies to ship production to China.

And we dare not let this discussion of the need to improve our science and math education and increase our competitiveness turn into an excuse for corporations not to invest in America, not to invest in American workers, to take the short-term, cheap approach of exporting jobs and means of production. That certainly has been the case, and it is all too easy to allow hand-wringing about our inability to find qualified workers here in the United States as an excuse not to invest in the United States. And we dare not let that happen.

Mr. SIMONS. Can I comment on that?

Mr. HOLT. Absolutely. I was saying it, in part, for your benefit, so I would welcome a comment. Yes, Thank you.

Mr. JUREY. Because I think that puts in context some of my earlier remarks. Not only are U.S. firms setting up production, distribution and sales in other countries, but foreign-owned firms are setting up production, distribution and marketing here in the United States. It really is a global market.

And I will go back to my comment that most of the world's consumers in the future won't live in the United States. How will U.S. firms remain competitive if most of the people that are buying don't live here, if they aren't in those countries with production facilities, marketing facilities, distribution facilities? And how do we respond accordingly when an extremely confident corporate citizen, like Siemens, they are a European-owned company, is also here in the United States manufacturing equipment for the U.S. Postal Service, as an example? It is working both ways.

And it is why I said I don't think the debate should solely be around how many engineers we graduated versus how many engineers another country graduated. This whole debate needs to be taken in the context of what is happening in the global market-

place, and those shifts are permanent and they are going to continue, and it is not going to come back to the way it was.

And so we really do have to think about how do we become both collaborators and competitors with those countries and those marketplaces? And it is going to take a lot of thoughtful discussion between the business community and those of you who are policymakers and those in the educational side of the business.

Chairman MCKEON. And we could probably sit here all afternoon in thoughtful discussion. But I want to thank you for being here, and this will be an ongoing dialog, and I hope you will continue to participate with us.

With no objection, this hearing is adjourned.

[Whereupon, at 1:42 p.m., the committee was adjourned.]

[Additional material submitted for the record:]

Prepared Statement of Hon. Charlie Norwood, a Representative in Congress From the State of Georgia

Mr. Chairman, I thank you for hosting today's hearing to explore the important issues facing the competitive nature of the American economy, and to examine the Administration's "American Competitiveness Initiative."

The Administration's proposal responds to significant developments in the international economic arena that impact American families of all walks of life. After all, it is no secret that the United States' no longer enjoys preeminence in the field of innovation, and our competitors abroad are making great strides.

India, China and other emerging powers to our east are surging ahead in high technology fields that are producing the jobs of the future. India alone produces over 350,000 engineers every year. China produces over 600,000.

These folks can't compete with an MIT rocket scientist. However, they are young, hungry and filling jobs that American companies send abroad.

In some cases American firms outsource to meet bottom line numbers and compete with international foes. In others they outsource to take advantage of the ready pool of available talent trained with basic knowledge of math, science and technical skills that are necessary for success in the field of information technology.

At the same time, American youngsters are falling behind the rest of the developed world in learning and retaining these basic skills. 15-year-old American students currently rank 24 out of the 29 internationally recognized developed nations in math literacy and problem solving while their peers in Europe and Asia are surging ahead.

Mr. Chairman, it is imperative for Congress and the Administration to respond to this challenge and help our children reverse the trend. This hearing is a good start, and I look forward to our witnesses' testimony on both panels to help shed light on the issue, detail reform proposals and walk Members' through the details.

Thank you Mr. Chairman, I yield back.

[Various articles submitted by Ms. McCollum of Minnesota follow:]

[Article from the St. Paul Pioneer Press, March 9, 2006]

MNSCU Puts Priority on Math and Science

By JAMES H. MCCORMICK

The call for students to take more science and math classes has been sounded far and wide.

A National Academy of Science panel documented trends that show this country losing its edge in scientific innovation. A Time magazine cover story, "Is America flunking science?", detailed how other countries surpass us in training scientists, research spending and scholarly journal articles. President Bush and leading Democrats promised new initiatives to reverse these trends.

But now, a disturbing new poll suggests parents don't see the need. About 70 percent of high school parents in the poll conducted by Public Agenda, a national research group that tracks education trends, say their child gets the right amount of science and math.

The evidence in Minnesota is clear, however, that high school students need a firmer grounding in these subjects. Mathematics made up more than half of the catch-up courses taken by students in the state's public higher education institutions, according to the latest college readiness study by the Minnesota State Colleges and Universities and the University of Minnesota. This weak showing in math among entering Minnesota college freshmen also means too few students major in math, science and engineering.

Out of nearly 66,000 graduates from all Minnesota institutions of higher learning in 2003, only 2,500 majored in engineering, math and physical science. Evidence of that low number showed up in a recent report card by the Corporation for Enterprise Development, which ranked Minnesota 26th in the number of science and engineering graduate students.

Competitiveness correlation. You may ask why science and math are so important. Let me be clear. We still need college graduates in communications, social sciences and, yes, the fine arts. A rich, vibrant and strong state demands citizens with those degrees, too.

But put simply, mastery of math, science and engineering will in large part determine whether this state can compete. As the National Science Foundation leadership recently noted, "Civilization is on the brink of a new industrial order. The big winners in the increasingly fierce global scramble for supremacy will not be those who simply make commodities faster and cheaper than the competition. They will be those who develop talent, techniques and tools so advanced that there is no competition."

Without an abundance of well-trained engineers and scientists, Minnesota cannot maintain a fertile environment for its businesses to become the 3Ms, Honeywells and Medtronics of the future. In short, what's at risk is our ability to maintain a high quality of life for the next generation.

To produce more science, engineering and math majors, we must act now. In the Minnesota State Colleges and Universities system, we are addressing this challenge in three ways:

- Upgrading outdated science labs.
- Ramping up recruitment of students and teachers into science and math programs.
- Increasing access for students—largely low-income and minorities—who traditionally have not been part of the higher education system in large numbers.

Upgrading science labs. Since 1998, the Legislature has approved our requests to invest $296 million in updating science labs. If the 2006 Legislature approves the $84 million we seek for more science lab upgrades, we will have made substantial progress at many of our 53 campuses. To draw more students into science and math, we have established two Centers of Excellence focusing on engineering and manufacturing. By strengthening ties with K-12 educators, we aim to excite students about these challenging fields. In fact, the main mission of these centers, which involve 17 of our state universities and colleges, will be to produce a pool of talented and highly skilled engineers and manufacturing workers who think creatively and adapt rapidly.

We also believe that Minnesota will not be able to meet this challenge without bringing substantially more citizens into the ranks of the college educated. Too many citizens still do not pursue formal education beyond high school. In 2004, only 26 percent of Minnesota's young adult students of color were enrolled in higher education. That's a lot of lost talent. The Minnesota State Colleges and Universities offer the best value and a logical steppingstone to pursuing baccalaureate or advanced degrees.

So, the question that sits squarely before lawmakers, policymakers and the public is: How can we produce more engineers and scientists? The answer seems clear: By making a solid investment in public higher education, we can secure a bright future so our children and grandchildren stay in Minnesota and prosper.

McCormick is chancellor of the Minnesota State Colleges and Universities System.

[Article from the Minneapolis "Star-Tribune," March 6, 2006]

A Conversation; On Education in Minnesota; Competing With the World

By LORI STURDEVANT, Staff Writer

Forget that Minnesota sends a bigger share of its high school grads to college than all but two other states. Don't get excited about Minnesota's college-bound high school students topping the nation in ACT entrance exam scores. Stop boasting about being seventh in the nation in high school graduation rates. Don't compare Minnesota to the rest of the nation, say a growing number of the state's educators

and CEOs, because American education isn't keeping pace with the world's leaders. If Minnesota is going to prosper in the global economy of 2025 and 2050, it has to keep up with Norway, Singapore and China. And there is reason to worry that it is not. Among those who are worried are David Laird, president of the Minnesota Private College Council, Steven Rosenstone, dean of the College of Liberal Arts at the University of Minnesota, and Mark Chronister, partner at the Minneapolis office of the business accounting and consulting firm PricewaterhouseCoopers LLP.

They met recently with editorial writer Lori Sturdevant to share their concern about the educational competition and their ideas for staying in the race. Here are themes and excerpts from their conversation:

The leading indicators on educational competitiveness are in, and for America, they're not good.

Rosenstone: The numbers that we frequently cite are lagging indicators. That we are a very educated population is a lagging indicator, not a leading indicator of our future. The leading indicators are 8th- and 12th-graders—how many are prepared to go on to college and graduate school, and how many are being left behind. That's where the alarm bells should be going off very loudly.

Look at what's been happening to the number of science teachers we have, the preparation that schools are providing in K-12, the way in which the resources we've invested as a society in K-12 have dwindled, the way class sizes have grown.

The preparation of students in math in this country and other countries is dramatically different, and for us, it's going in exactly the wrong direction. A couple of facts: Twenty-nine percent of the U.S. elementary grade students who took an international test in mathematics performed at a proficient level. American 12th-graders in 1999 were last among 20 nations who took a mathematics test. In 2003, U.S. 15-year-olds ranked 24th among students in 29 nations tested in mathematics.

This is about as real as it gets. But there isn't a Sputnik. There isn't a Pearl Harbor. There isn't a 9/11. It is the frog sitting in the water, and the water is getting warmer and warmer.

Laird: Minnesota may be leading the nation in ACT scores and the share of people going to college. But that's leading a group that's going downhill. It's not recognizing who our real competition is.

Laird (continued): Nations around the world are investing huge sums of money to ensure that they will have the most prepared students, in every field. Twenty or so nations have made huge strategic investments in higher education in the last 20 years, and that does not count what India and China are planning for the next 20. China is going to build 800 new universities in the next 10 years. Eight hundred! They will each serve somewhere between 20,000 and 35,000 students.

The education gap is about to become more evident.

Chronister: Here's something that will exacerbate this problem. Business is looking at the biggest retirement cohort that it has ever seen. Where are the knowledge workers going to come from when the baby boomers retire?

Laird: The cohort in our population now with the highest educational attainment is the one that is stepping into retirement. Nothing behind them so far is comparable. As it stands, we cannot replace those who are retiring.

For Minnesota, education matters more than in some other states.

Rosenstone: A fundamental difference in Minnesota now, compared with a century ago, is that the key industries in our state are not tied to natural resources, except for human capital. Taconite and agriculture are not the lifeblood of our economy the way they once were. The financial services industry can locate anywhere in the world. Cargill can go anywhere. General Mills is not tied to the river. 3M is not tied to St. Paul.

Why do they want to be in Minnesota? It's the human capital—the educated workforce. That's why, in education, we can't just be hanging on. We have to be leading.

Minnesota's white/nonwhite achievement gap has got to go.

Rosenstone: The segment of the Minnesota population that's growing most rapidly has the lowest probability now of going on to college, and therefore the lowest probability of being prepared to fill the jobs that Minnesota needs if it is going to prosper in the future. Minnesota can't afford to leave so many kids behind.

Chronister: We in business think that in this global environment, you have to have a diverse workforce, and you have to have an environment in which diverse people are comfortable. The more diverse our workforce is in Minnesota, the more successful our businesses will be.

The people we're leaving behind now in this state are primarily minorities. By 2050, the U.S. Census Bureau says this country will be 53 percent white, 47 percent

minority. If we can't figure out how to educate the students we're leaving behind now, then by 2050, we could become a cold New Orleans.

Minnesota has the wherewithal to change this picture. Here's how:

Laird: Look at the experiences of Singapore and Norway. Both of those nations are close to our size. Both have been through the process of determining their strategic goals, and they have people working in yoke to get there. They are outperforming us at every level of education. The kids in Singapore typically study five languages, and take calculus in the 10th grade. There's no reason we can't do it, too.

We need an ongoing assessment of our competition. Our competition isn't South Dakota and North Dakota. It's offshore. We are flying blind in that regard.

Rosenstone: Imagine what would happen if college students, as part of their education, would engage with K-12 students as mentors. Businesses have hundreds of partnerships with K-12 now, but they are not coordinated in a way that's pulling together. Imagine if they were. Imagine if we could develop our own Teacher Corps of recent college graduates and retirees, reaching into K-12 in a way that keeps kids on track.

Imagine if every college ensured the kind of access that we are trying to offer at the University of Minnesota, so that the message is crystal-clear to every fifth-grader in this state: If you are prepared for college or university, there will be a place for you. You will have access.

Those are all things that are in our reach. We can make this a state project, if we have the will. This can be our moon shot.

Chronister: Here's an analogy. Look at what happened when we started to say that we don't have enough women in college. Now we have student bodies that are 55 or 60 percent female. Why can't we do something similar here?

Needed: A statewide summit meeting on increasing educational attainment. Soon.

Chronsiter: We have a window of opportunity to address this. We need to move before the baby boomers retire.

Rosenstone: The punch line here is a cry for a state summit on education. We need a statewide conversation that engages the leadership of every sector—business, education, government, philanthropy, everyone who has a stake in improving education. Together, we've got to take this on. This is the issue that will determine the future of this state.

Call to Invest in the Future

Excerpt from a March 9 letter from two Minnesota CEOs, Cargill's Warren Staley and Medtronic's Arthur Collins, to Gov. Tim Pawlenty:

"The best opportunity our home state has of filling the shortfall of available college students lies among students who would be the first in their families to attend college. We hope you will act this session to increase need-based financial aid for students who will not be able to afford higher education without a direct investment in their futures.

"Over the history of our companies, through our corporate philanthropy, we have given many millions of dollars for both the improvement of academic excellence at public and private colleges and universities, and the improvement of access to these institutions. We make these commitments of dollars both in appreciation of what we have received and as an investment in our companies' own futures. We hope the State of Minnesota will also make an investment in our state's future educated workforce."

While We Are Sleeping

In 1991, the United States ranked second in college participation. In 2001, it was 15th. In 1975, the United States conferred 59 percent of the world's doctoral degrees. At the end of 2001, the share was 41 percent and declining. The United States ranks 17th in the world in high school graduation rate, at 74 percent. In tests assessing basic knowledge and skills, U.S. students ranked 15th in reading, 19th in science, 24th in mathematics and 24th in problem solving.

SOURCE: Minnesota Private College Council.

[Presentation to National Association of Independent College and University State Executives, February 6, 2006]

While We Are Sleeping

By DAVID B. LAIRD, JR., President, Minnesota Private College Council

It is easy to be complacent about U.S. competitiveness and pre-eminence in science and technology. We have led the world for decades, and we continue to do so in many research fields today. But the world is changing rapidly, and our advantages are no longer unique. Without a renewed effort to bolster the foundations of our competitiveness, we can expect to lose our privileged position. For the first time in generations, the nation's children could face poorer prospects than their parents and grandparents did. We owe our current prosperity, security, and good health to the investments of past generations, and we are obliged to renew those commitments in education, research, and innovation policies to ensure that the American people continue to benefit from the remarkable opportunities provided by the rapid development of the global economy and its not inconsiderable underpinning in science and technology.

Public Opinion on America's Innovation Future

We're regularly reporting on studies that bemoan the state of America's innovation infrastructure, and call for major new investments in science, technology, and innovation. Most of these reports are produced by expert panels of scientists, researchers, and industry leaders, but these concerns are not limited to elite opinion-makers. A new poll shows that average Americans are also greatly concerned about the U.S.'s future competitive positions. The poll and a series of focus groups, let by Peter D. Hart Associates and the Winston Group, asked participants (opinion leaders and voters) to provide their views on America's ability to sustain its scientific and technological superiority through this decade and beyond. When asked to identify the world's economic leader in 20-30 years, 45 percent of voters identified China. Thirty-two percent selected the U.S. Interestingly, the survey saw a split in the intensity of concern about these competitive challenges. Thirty-three percent of opinion leaders cited improving innovation capacity as America's Number One future challenge. Only 18 percent of voters shared this view. However, there was consensus around the critical importance of improving education. A majority of all groups believe this is the key to enhancing American competitiveness.

To view the results of the Business Roundtable's survey on "Innovation and Competitiveness: Addressing the Talent Gap," visit *http://www.businessroundtable.org/pdf/20060112Two-pager.pdf*

- Nations with major higher education initiatives in past decade: Finland, South Korea, the Netherlands, Japan, Canada, Belgium, China, India, Singapore, Thailand, Australia, Great Britain, Germany, Ireland, Hungary, Poland, and Czechoslovakia.
- Nations with organized programs to attract talented foreign students: Belgium, Canada, Finland, India, Ireland, the Netherlands, Sweden, Australia, New Zealand, Singapore, Taiwan, Hong Kong, South Korea.
- Nations with organized programs to attract established scientists and scholars: European Union, Singapore, South Korea, China, India, Australia, New Zealand.
- In 1975 the U.S. ranked third in the world in production of degrees in natural science or engineering—in 2005 the U.S. ranked 20th. In 2004 both China and India produced ten times more than in the U.S.

Recent Facts to Consider

High School Graduation Rates

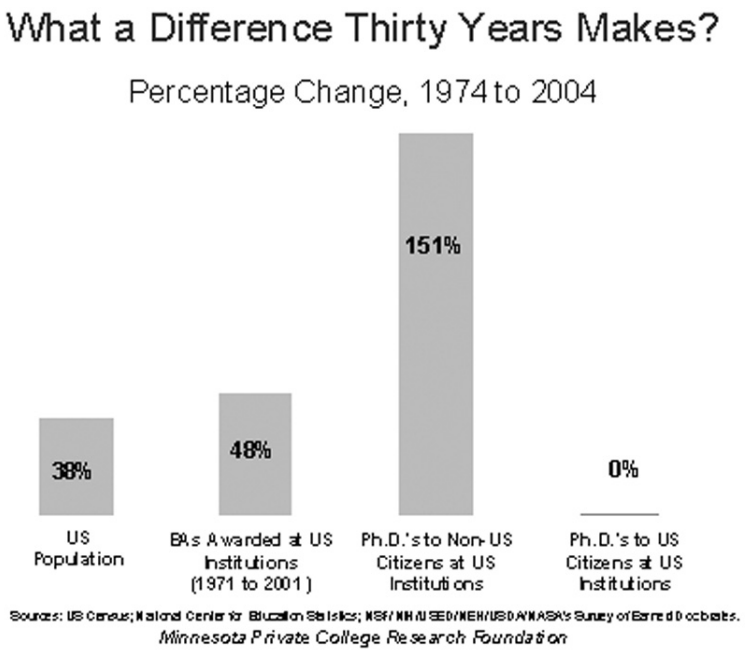
The U.S. ranks 17th in the world in high school graduation rates (74 percent) compared to over 90 percent in Hungary, Japan, Germany, Poland, Slovak Republic. In recent PISA (International Student

Assessment) tests assessing basic knowledge and skills, U.S. students ranked:

- 24th in mathematics
- 24th in problem solving skills
- 15th in reading proficiency
- 19th in science proficiency

R & D

Japan and Korea spend a larger portion of GDP than the U.S. From 1995-2001 R & D spending in China, Korea and Taiwan increased four times more than the U.S. China plans to double its investment in the next decade.



In 1975, the U.S. conferred 59 percent of the world's total doctoral degrees—at the end of 2001 our share was 41 percent and declining.

International Student Applications

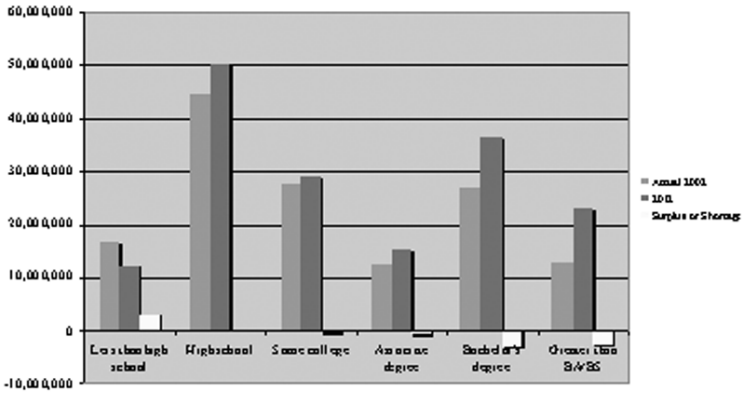
In the past three years international applications to U.S. graduate programs fell 28 percent, international applications for engineering study dropped 36 percent, and international enrollments in U. S. graduate programs have dropped the last two years—the first declines in three decades.

Focus on China

- China now has the largest higher education system in the world.
- In the past six years, China has doubled participation in higher education and has plans to double again in the next two years.
- There are now more people in China who speak English than citizens in the U.S.
- As China collects income from U.S. debt, it will have a steady resource to invest in education as well as R & D.

Another look at the U.S. future:

Projections of Education Supply and Demand
2002-2012



Source: Anthony P. Carnevale and Jeffrey Strohl. Authors' analysis of CPS and BLS data.

In 1983, in the Nation at Risk, the authors concluded:

Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is one that undergirds American prosperity, security, and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. What was unimaginable a generation ago has begun to occur—others are matching and surpassing our educational attainments.

Our neighbors and elected leaders are still asleep. It is time to wake them up. The rest of the organized world is not waiting for us to assess our challenges and opportunities. Our nation is not prepared for the future.

In addition to cited and public sources, this presentation borrows from a speech to the American Association of University Women entitled, "Education and America in the 21st Century" by Steven J. Rosenstone, Dean, College of Liberal Arts, University of Minnesota, November 21, 2005.

Source: Rising Above the Gathering Storm, National Academy of Sciences 2005

Responses From Secretary Spellings to Questions Posed at the Hearing

From Representative Danny Davis:

Q: *I was pleased to learn that you share my concern that there are too few black male teachers involved in early childhood education. What specific remedies do you envision that could address this often overlooked problem that could be pursued by the Department of Education? Do you have any advice for legislators?*

Secretary SPELLINGS: I believe this issue is best addressed by increasing overall educational opportunities for African-American students. No Child Left Behind has as one of its primary goals increasing the academic achievement of students who in the past were too often left behind by our education system, and African-American males have suffered perhaps more than any other group from what the President calls "the soft bigotry of low expectations." If we are successful in closing achievement gaps through NCLB, more poor and minority students, including black males, will graduate from high school prepared for postsecondary education and a wide range of careers, including teaching at all levels.

In addition, opening the pipeline to the teaching profession through initiatives such as our Transition to Teaching program, President Bush's proposed Adjunct Teacher Corps, and innovative programs such as Teach For America will help encourage more African-American males to pursue teaching careers. Few things arc more inspiring to students than a great teacher, and we are working hard to put more great teachers in all classrooms.

From Representative Susan Davis:

Q: *This question deals with the breakdown in funding within the American Competitiveness Initiative (ACI). It seems that one advantage the U.S. has over India, China, and other nations is the vast network of research universities throughout the United States. Certainly, the State of California has invested in its universities. Can you explain how the ACI proposal invests in our public research institutions, such as the research facility I just described?*

Secretary SPELLINGS: Over the next 10 years, the ACI would double investments in key physical science and engineering research agencies: the National Science Foundation (NSF), the Department of Energy's (DOE) Office of Science, and the Department of Commerce's National Institute of Standards and Technology labs. NSF and DOE supports university-based research in a variety of ways. For example, the increased funding proposed for NSF alone in fiscal year 2007 is expected to support as many as 500 more research grants and provide opportunities for 6,400 additional scientists, students, post-doctoral fellows, and technicians. Over 10 years, this expanded support will have made a substantial contribution to maintaining the leadership of our public research institutions.

Q: *Additionally, how would this proposal build upon and expand on the advantages the U.S. already holds over other nations, such as our research university networks?*

Secretary SPELLINGS: In addition to the doubling of research investment that I just described, which would provide substantial support to those university networks, the ACI would encourage additional private-sector investment by making permanent the Research and Experimentation tax credit; strengthening K-12 math and science education to expand the pipeline of future science, technology, engineering, and mathematics (S1EM) graduates; and supporting immigration reform to help attract and retain the best and brightest researchers from around the world.

Q: *Along these lines, much of the funding outlined in the proposal would go toward R&D tax incentives rather than direct federal funding for research—$1.3 billion for research compared to $4.6 billion for R&D tax incentives. Can you explain how this is a healthy balance of tax incentives and direct funding for research and what brought you to these numbers? Why is more directed toward tax incentives?*

Secretary SPELLINGS: Private-sector research and development investment totals more than $200 billion annually, or about two-thirds of all U.S. research and development investment. We think that gives our $4.6 billion Research and Experimentation tax-credit proposal tremendous leverage in stimulating future research.

From Representative Hinojosa:

Q: *I am concerned that our federal policy and our budget have overlooked a large, important population. The base of my congressional district is South Texas—I-Iidalgo and Cameron Counties. In this area, half of the adults over the age of 25 do not have a high school credential. Many in my community are struggling to learn English, and there are long wait lists for English as a second language classes. It should come as no surprise that these two counties have the lowest wages in the nation.*

The President's budget does not propose to increase investments in this population—neither on the labor side nor on the education side. In fact, last year, the President proposed to slash adult education programs by two-thirds. The minimum wage has not been increased since 1997. How can we be competitive if we write off such a large part of our adult populations?

Secretary SPELLINGS: I would begin by saying that we arc not proposing a cut in the FY 2007 budget for Adult Education. The President's 2007 request would continue funding for the program at the current level. In addition, the Department of Education, in partnership with the Department of Labor, helps address the needs of job seekers through One-Stop Career Centers, established through the Workforce Investment Act. These centers offer training referrals, career counseling, job listings, and other employment-related services. The Department of Labor also has implemented two initiatives designed to improve workers' education and training opportunities. One is the President's High-Growth Job Training Initiative, which has awarded more than $250 million to bring State and local workforce-development agencies together with industry and education entities to focus on training employ-

ees to work in high-growth fields, such as health care, biotechnology, and energy. The second is the Community-Based Job Training Initiative, which provides grants to community colleges to train workers for employment in high-growth industries. In addition, as part of the competitiveness initiative, the President has proposed enhancing the workforce investment system by providing Career Advancement Accounts that workers could use to obtain the education and training they need to succeed in the global economy. Career, Advancement Accounts are self-managed accounts that would provide up to $3,000 per year to enable current and future workers to gain the skills needed to successfully enter, navigate, and advance in the 21st century labor market, In sum, we are not in any sense writing off the population of adults who can benefit from adult education and job training programs.

Q: *What is your agency proposing to do differently to develop the talent and potential of this group of adults?*

Secretary SPELLINGS: In addition to the Adult Education programs and the two Department of Labor initiatives I just described, we are working to establish strong performance accountability requirements for State and local programs that measure achievement on the basis of academic achievement and employment-related outcomes. These requirements have led to increases in measures of adult education success, including high school completion and entrance into and retention of employment, which reflect improved delivery of services at the State and local level. At the same time, funding for K-l2 programs focusing on teaching the basics of reading and mathematics, as well as programs specifically for the children of immigrants who are often limited English proficient, help ensure that a new generation of adults will not need remedial education after it has left the traditional school environment.

Q: *I applaud the administration's interest in improving high schools although I think that dismantling the programs that are working, such as GEAR UP, Upward Bound, Talent Search, and career and technical education is counter productive to your stated goals.*

In the Hispanic community, the low high school graduation rate has been a chronic problem and has held our community back from reaching its full potential. America will not be competitive with only half of our Hispanic students graduating from high school and only 20 percent of them ready for college. That is why I introduced the Graduation for All Act with a focus on adolescent literacy and making sure at-risk students have a real academic plan for graduation. I am looking forward to what we will learn from the Striving Readers program.

Last week, I introduced the Partnerships for access to Laboratory Science Act—H.R. 5106. This legislation will partner high need school districts with colleges and universities, and the private sector to improve the teaching of science through the integration of hands-on learning into science education programs at high school laboratories as part of a comprehensive plan to improve the quality of science instruction and student learning outcomes. Would the Administration be supportive of this type of proposal?

Secretary SPELLINGS: We certainly support these kinds of efforts in general, I do want to point out that of the eight grants totaling $30 million awarded this past year to support the implementation of Striving Readers Programs across the country, four were awarded to Hispanic-serving school districts, or school districts with at least 25 percent Hispanic student enrollment (Chicago Public Schools, Newark Public Schools, San Diego Unified School District, and Springfield and Chicopee Public Schools). However, at a time when Federal dollars are scarce because of the need to focus on deficit reduction, we have to be careful about new initiatives that we may not be able to afford. At the same time, I believe that certain aspects of your proposal, with some modification, could be funded under the President's High School Reform proposal.

Q: *What are some other steps that we can take to improve math and science instruction in high school beyond the AP and lB programs?*

Secretary SPELLINGS: In addition to the expansion of AP and lB offerings in our high schools, the President's American Competitiveness Initiative would fund an Adjunct Teacher Corps that would create opportunities for qualified professionals from outside the K-12 educational system to teach secondary-school courses in the core academic subjects, with an emphasis on mathematics and the sciences. Also, we have already begun the work of the Academic Competitiveness Council (ACC) created by the Deficit Reduction Act that President Bush signed into law on February 8, 2006. The Council, which held its first meeting on March 6, is charged with identifying all federal programs that focus on math or science education, as well as the target populations served by those programs; assessing the effectiveness of these programs; and recommending ways to integrate and coordinate overlapping or duplicative activities. The ACI would support the work of the ACC by providing $5 million for the Evaluation of Mathematics and Science Programs designed to evaluate

the effectiveness of Federal elementary and secondary mathematics and science programs.

In addition, the President's High School Reform proposal would give States and school districts new tools and resources for improving the overall quality of high school education, including math and science education.

Finally, the recently signed Higher Education Reconciliation Act included a longstanding Administration proposal to permanently increase the amount of loan forgiveness available from $5,000 to $17,500 for highly qualified math, science, or special education teachers working in eligible low-income schools. This provision should create a strong financial incentive for teachers to teach in high-need schools, which often face the largest shortages of highly qualified teachers in these important subject areas.

From Representative Hoff:

Q: *The U.S. must pay more attention to math and science education, as well as critical foreign languages, and their impact on global competitiveness. That's one of the main reasons I cosponsored the McMorris amendment to create an adjunct teacher corps to help focus more on these areas in our nation's schools. But I want to ensure that amendment does not create the unintended consequences of undercutting NCLB's requirement that a highly qualified teacher be in every classroom. What elements do you think need to be present in a final proposal to remedy that conflict?'*

Secretary SPELLINGS: We do not believe that there is a conflict. To help meet the need for teachers with a solid background in the subject matter they are teaching, the President's budget includes $25 million for the Adjunct Teacher Corns. The program will provide competitive grants to partnerships of school districts and States to encourage up to 30,000 math and science professionals over eight years to serve as adjunct high school teachers.

The Adjunct Teacher Corps initiative would complement other teacher programs in the Department, focusing on areas of need not addressed by those programs. The proposed program would invite professionals from outside of secondary education to teach in schools generally on a part-time or temporary basis, bringing a wealth of knowledge and experience to provide real-world applications for some of the abstract concepts taught in classrooms, especially in mathematics and science. Other Department programs, including Transition-to-Teaching and Troops-to-Teachers, help recruit and train a highly qualified, certified, permanent teaching force. In sum, while we fully support the highly qualified teacher requirements of NCLB, we believe that bringing scientists, engineers, mathematicians, and other STEM professionals into the classroom on an adjunct basis will enhance, not detract from, the national effort to ensure that all students arc taught by skilled and knowledgeable teachers.

Q: *How will the Department of Education implement the President's National Security Language Initiative?*

Secretary SPELLINGS: Under the direction of the President, the Departments of Education, Defense, and State and the Office of the Director of National Intelligence will undertake a comprehensive national plan to expand foreign-language education beginning in early childhood and continuing throughout formal schooling and into the workforce. The National Security Language Initiative is designed to increase dramatically the number of Americans learning critical-need foreign languages such as Arabic, Chinese, Russian, and Farsi through new and expanded programs. The NSLI is built around three broad goals: (1) to address weaknesses in our teaching and learning of foreign languages, especially critical-need languages; (2) to expand the number of Americans mastering critical need languages, starting at a younger age; and (3) to increase the number of advanced-level speakers of foreign languages, with an emphasis on critical-need languages. Our 2007 request includes $57 million for a combination of new and existing activities targeted to these goals.

Q: *The President's National Security Language Initiative addresses the long-standing problem of creating an articulated K -16 foreign language program pipeline, but finding highly qualified teachers for these programs remain, f-low will the Department of Education strengthen recruitment and retention programs for foreign language teachers? Are there any plans within the teacher training objectives of NSLI to add or make available training for immersion teachers at the elementary level?*

Secretary SPELLINGS: The President's request for the NSLI would help recruit new foreign language teachers by providing $5 million for a Language Teacher Corps proposal designed to train college graduates with skills in critical foreign languages to enter the teaching force. The NSLI also includes a $3 million request for a Teacher-to-Teacher initiative that would support retention by providing intensive summer training sessions and online professional development for foreign language teachers.

In addition, State and local entities may use funds they receive under a number of Department programs, including the Improving Teacher Quality State Grants

program, the Transition to Teaching program, and the Teacher Incentive Fund, for recruitment and retention activities. For 2007, the Administration has requested $2.9 billion for the Improving Teacher Quality State Grants program, which would allow States to use their State-level funds for a variety of activities, including teacher recruitment and retention programs.

Q: *Since mathematics, science, and technology are at the root of innovation and NCLB has been testing only math and reading, how or will the 2007 science assessment be incorporated in AYP? Do you plan to seek changes during reauthorization of NCLB and if so how will it be weighted in AYP school assessment?*

SECRETARY SPELLING: We believe that student results on science assessments should be included in AYP determinations. However, we are just beginning to discuss NCLB reauthorization within the Department and, thus, have not yet developed detailed proposals on that issue.

Q: *What steps are you taking to fully fund the "No Child Left Behind" Act, currently at a shortfall of approximately 55 billion dollars?*

Secretary SPELLINGS: We have never agreed with the argument that massive funding increases are required to "fully fund" NCLB. The President and the Congress have provided very substantial overall increases for NCLB programs over the past five years, and we believe current funding levels are sufficient to leverage the changes the law was designed to encourage at the State and local levels.

Q: *Further, what actions are you taking to ensure that teachers are not "teaching to the test," but rather teaching for sustained learning and critical thinking.*

Secretary SPELLINGS: We don't necessarily see a conflict between an appropriate level of test preparation and sustained learning and critical thinking, so long as assessments are aligned with State standards and curricula, which is required under NCLB. In other words, "teaching to the test" is often providing instruction designed to ensure that students master the material that is covered by State content standards, which is what is covered in State assessments. We believe that that type of instruction is entirely appropriate.

Q: *The recently passed budget reconciliation increased the interest rate on student loans and cut $14 billion from student loans over 5 years, while the cost of higher education has steadily increased and will continue to increase. What are you doing through action, advocacy, and in collaboration with other agencies to help make higher education affordable or to assist students and families in paying for higher education or continuing education without sinking deeper into debt'?*

Secretary SPELLINGS: In today's highly competitive global economy, it is vital that no American student be denied access to high-quality postsecondary education due to high costs. For this reason, in September 2005 1 created the Commission on the Future of Higher Education to examine how we as a nation can keep higher education affordable and accessible. The Commission, made up of experienced leaders from education, business, and government, is holding a series of meetings around the country and gathering data from respected experts on higher education. A final report with the commission's findings is expected by this August.

In addition, the Higher Education Reconciliation Act (HERA) created Academic Competitiveness Grants, a new need-based program supported with mandatory funding that will award annual grants of up to $1,300 to high-achieving first- and second-year students who have completed a rigorous high school curriculum. The hERA also created National Science and Mathematics Access to Retain Ialent Grants, or SMART Grants, that provide up to $4,000 for third- and fourth-year students majoring in mathematics, science, technology, engineering, or critical foreign languages. We estimate these programs will provide more than $4.5 billion in grant assistance over the next five years.

Q: *To remain competitive globally, our education system needs work. No Child Left Behind is a start to improvement, but more work needs to be done. For example, we expect students to learn the content of 40 chapters of a science textbook in 180 six or seven-hour days, along with every other subject. This makes it difficult to truly understand the subject and not just memorize it. Are there any discussions in the Department of Education and with other agencies concerning extending the school day, extending the school year, re-aligning the curriculum and assessment to examine higher order thinking skills and interdisciplinary collaborations, or other such adaptations to the structure of the system to help students succeed?*

Secretary SPELLINGS: The standards and assessment requirements of No Child Left Behind are, in fact, designed and intended to encourage mastery of challenging material and higher-order thinking skills. For example, the Department's regulations governing the State assessments required by NCLB specifically state that these assessments must include "measures that assess higher-order thinking skills and understanding of challenging content." However, decisions about how to structure the school day or year. as well as about the precise kind of teaching and learn-

ing required to meet challenging State standards, fall squarely within the realm of State and local control over education. We do give States, school districts, and schools considerable flexibility in the use of Federal formula grant funds to support the kinds of adaptations you describe, but we leave it up to State and local authorities to decide what adaptations are appropriate for their unique circumstances.

Q: *What will you do to ensure that the education pipeline is producing the quality and quantity of science and technology workers for the next 10-20 years, including extended education and skills training for science, technology, engineering and mathematics professionals?*

Secretary SPELLINGS: This is precisely the focus of the President's American Competitiveness Initiative. In particular, the Math Now proposals for elementary and middle school students are critical for building the STEM pipeline over the coming decades. In my view, identifying and introducing stimulating math and science curricula and instruction in the early grades is the best way to encourage greater numbers of students to pursue advanced study and careers in STEM fields.

Q: *What role does the NSF play in your interagency plans to keep America competitive? There is concern that STEM education is being removed from the NSF, which can be challenging since the NSE has the researched based approaches to teaching science and mathematics whereas the Department of Education has the dissemination aspect of math and science education and the Department of Labor has workforce development.*

Secretary SPELLINGS: To begin with, the ACI would double finding for NSF over the next 10 years, so we think that's a pretty strong signal of support for NSF. In addition, NSF will play a key role in our efforts to identify and evaluate effective math and science education programs through the Academic Competitiveness Council.

From Representative McCarthy:

Q: *The achievement gap from kindergarten through college and beyond is now well known. Too many children begin life disadvantaged. We have made progress in closing the gap, but not enough. Both research and our progress so far show that people can and must achieve at much higher levels. Global competition, while in the news, is not well understood. It is not just an issue of global out-sourcing to countries that will do the job cheaply. Other nations compete not only with lower costs but also higher quality. I saw this first hand when I visited China last year, along with Chairman McKeon. China has 1 .3 billion people. They could get it wrong most of the time and still have more people ready for the high skilled jobs of tomorrow than we will. We need to educate more people through high school and beyond. At current rates, experts estimate that by 2020 there won't be enough qualified American to fill 14 million of the most skilled, highest paying jobs.*

Already, New York faces critical shortages in the major professions, including those that provide vital health and safety services, like nurses. If present trends continue, too few people will have the knowledge and skills our nation needs. This is unacceptable. If we act together, we can correct this problem now.

In November 2005, the New York Board of Regents held an Education Summit, called "A Call to Action." The summit was widely attended by 650 leaders of education, business and community groups. The Summit's purpose was to help New York to develop strategies to compete globally. The last time the U.S government did such a summit was 16 years ago under the first President Bush. It included governors, and educators, but not businesses from what I understand.

What do you think about holding a national Education Summit to address global competitiveness? The Summit would include educators, governors, businesses, labor and community groups.

Secretary SPELLINGS: The Department and the Administration have sponsored several education-related "summits" over the years-the First lady's 2002 summit on early childhood development and former Secretary Paige's 2003 summit on math education are two examples-but at this point we are not planning one for competitiveness. One reason is that typically we hold summits to draw attention to issues that are "under the radar" of most people and otherwise might go unnoticed. I don't think that is the case with the competitiveness issue. The President, other Cabinet members, and I have been talking about it continuously for the past two years, and Congress helped move things along by commissioning the Rising Above the Gathering Storm report released last year by the National Academies. This year, the combination of the President's American Competitiveness Initiative and numerous Congressional hearings has really focused the public's attention on competitiveness. I think we are past the "summit" stage on competitiveness and now are moving quickly toward taking concrete action on the issue.

Q: *The New York Summit concluded that they must focus on three areas: early childhood education, redesigning the high school model, and higher education. Specifically, one of the recommendations that came out of the New York Summit was that the compulsory age to start school should be lowered from age 6 to age 5. Data revealed that getting kids started even just one year earlier made a difference. New York believes it will help to meet one of the other goals that came out of the summit, which is that every child will read by the second grade. What do you think of lowering the school age from 6 to 5?*

Secretary SPELLINGS: I'm a firm believer in the value of early childhood education, and President Bush took the lead on reading in the early years with his Reading First and Early Reading First initiatives, which focus on reading well by the third grade. At the same time, resources are limited at all levels of government. so we have to be careful about new initiatives like lowering the age for compulsory education. For example, you said that the New York Summit also considered reforms at the high school and higher education levels. It would be great, of course, if New York could pursue initiatives in all three areas, but that may require some tough resource-allocation decisions. In the end, of course, it would be a State decision.

Q: *How about redesigning high school models?*

Secretary SPELLINGS: The Department has already sponsored a series of summits on high school reform, beginning in 2003. The Congress should appropriate funds for the President's High School Reform initiative, which would give States and school districts new tools and resources to identify and address the needs of students at risk of dropping out of high school. This $1.5 billion proposal, which we have been promoting for the past two years, would make formula grants to States for intensive interventions to help struggling students. Grantees would use test scores of incoming high school students to identify those most at risk of not meeting State standards and dropping out, develop individualized performance plans to meet student needs, and implement specific interventions and strategies for improving student achievement in high school. Also, the proposal would require all States to develop and implement reading and mathematics assessments at two additional grades in high school so that data are more frequently available to track students' progress and to help shape strategies to meet students' particular needs.

Q: *A lot of times students do not know what opportunities arc out there for them as far as what they can do after high school. Although guidance counselors do a good job in providing students with information on that issue, I think students would benefit from more comprehensive instruction in the area. Do you think it would be a good idea to require instruction on career opportunities and awareness as part of the required curriculum in school?*

Secretary SPELLINGS: Under the Administration's $1.5 billion High School Reform Initiative, local educational agencies will be able to include student counseling services as part of the comprehensive strategies they adopt to raise high school achievement and eliminate gaps in achievement among subgroups of students. While I do agree that counseling on career opportunities is important, the Department does not have authority to exercise any direction, supervision, or control over the curriculum, program of instruction, or administration of any school or school system.

Q: *Since No Child Left Behind is a major driving force behind whether the U.S. will be globally competitive, it seems to me to he important to get input from a broad spectrum of people on the issue. We only reauthorize once every 6 years, so we have to make sure and get it right which means listening to all sorts of views, even if we don't think we agree with them. I have found often when you sit and talk to someone you think you don't agree with, you find out you have more in common than you originally thought. What interest groups, businesses, think tanks have you, or do you plan to meet with to discuss reauthorization of NCLB?*

Secretary SPELLINGS: As I mentioned earlier, we are just beginning to discuss NCLB reauthorization within the Department, and have not developed any concrete plans at this point in time. However, we have been very active since the very beginning of NCLB implementation in working with the widest range of public- and private-sector partners to achieve common goals. We receive input on NCLB all the time in a variety of ways, and I'm sure we will continue to do so as we consider possible changes during the reauthorization process.

Q: *There has been a lot of focus on the shortage of math and science teachers, and we are all trying to figure out how to increase the supply of such teachers. I am concerned that the undersupply of highly qualified teachers appears to be a problem that K- 12 is expected to address on its own, when we know that higher education and teacher prep programs have a big role to play in recruiting and preparing teachers to fill critical shortage needs. I want to know whether we have enough information to determine where the current supply of teachers is coming from, and whether we know which teacher preparation programs are producing the most math and science*

teachers and which ones are not. If we don't begin to collect this data, how will we know which programs are responding to the critical shortage needs and which ones arc not?

Secretary SPELLINGS: The Department does collect a lot of data on teachers and teacher preparation, including the reports that schools of education must submit under Title II of the Higher Education Act, and there is considerable research on this subject in the university sector as well. One thing we know is that shortages tend to he local or regional in nature, and not national. That's why our recent efforts have focused on creating incentives to attract qualified teachers to hard-to-fill positions. For example, the new Teacher Incentive Fund is designed to give States and school districts new tools to recruit qualified individuals to work in high-need areas.

Q: *What do you recommend we do to make sure that we focus not just on creating new programs, but to make sure we focus on evaluating results?*

Secretary SPELLINGS: We work very hard to focus on results in everything we do, and this approach is built in to both NCLB and our entire, government-wide budgeting process. For example, the Administration has gone forward with a wide range of evaluation efforts, and, through efforts like the What Works Clearinghouse and the Promising Practices Initiative that I recently announced, has sought to provide more and better information to education practitioners on programs and approaches that are effective in teaching our children. As I mentioned earlier, the newly created Academic Competitiveness Council already is working to identify all federal programs that focus on math or science education, assess the effectiveness of these programs, and recommend ways to integrate and coordinate overlapping or duplicative activities. This work would be supported by a $5 million proposal in our 2007 budget for a government-wide Evaluation of Mathematics and Science Programs that would evaluate the effectiveness of Federal elementary and secondary mathematics and science programs.

In addition, the Administration has developed and implemented the Program Assessment Rating Tool (PART), a mechanism that provides a common framework for measuring the effectiveness of programs government-wide, and has begun to incorporate the results of PART reviews in budget decisions. In sum, I completely agree with you that we need to evaluate the impact of the programs that we already have, not just focus on creating new programs. I would urge the Congress to consider thoroughly the PART findings and the evaluation results, and to provide sufficient funding for needed evaluations.

Q: *The President's American Competitiveness Initiative would commit $5.9 billion in FY2007, and more than $136 billion over IC years to increase investments in research and development, strengthen education, and encourage entrepreneurship and innovation. While this investment may be welcomed by many, I am concerned that Federal Programs like Title I and IDEA continue to he under funded. Given the President's proposed budget for FY2007, I want to be assured that these vital programs would not he further short-changed. How will you ensure that Title I and IDEA will not be adversely impacted given the Presidents proposal to reduce funding for education?*

Secretary SPELLINGS: I think we need to keep in mind that both Title I and IDEA were never intended to supplant State and local financial support for education, but to leverage improvement for key populations. And our States and local communities remain strongly committed to education. Total national expenditures for elementary and secondary education are up $112 billion, or 25 percent, over the past five years, from $443 billion in 2001-2002 to $555 billion in 2005-2006. Federal support has more than kept pace over the same period. Under the President's Budget, Title I funding would be up 45 percent since 2001, Special Education Grants to States up 69 percent, and overall NCLB funding up 40 percent.

Q: *No Child Left Behind has not been funded to the level of its actual expense. Thus, our districts are spending tremendous money for example, for substitutes needed to administer, train for and score the tests. I-low can we help districts meet such expenses?*

Secretary SPELLINGS: We believe that funding provided by Congress and the President for NCLB programs is more than adequate to achieve the goals of those programs. As for the specific example you cited regarding test administration, States have received more than $1.9 billion in formula grants for assessment development and administration over the past five years. Based on data from GAO and other resources, we believe that this amount fully covers States' expenses in meeting NCLB-related assessment requirements.

Q: *One goal of No Child Left Behind is to improve academic standards for our most needy students. Yet, many of our support teachers have lost valuable instructional time with their students in order to administer and score tests, the results of*

which will not be known until September. How can we address the problem of lost instructional time?

Secretary SPELLINGS: Administering tests has always been part of teaching. As for scoring tests, my understanding is that, under State assessment systems, this function is handled by private firms under contract, not by classroom teachers. But the bottom line is that we cannot determine if instruction is meeting students' needs without testing for results. I believe it is highly unlikely that the time used for test administration in most jurisdictions has subtracted significantly from the amount of instructional time available during a full school year.