ue, and state budgets are tight, the funding that NSF will be able to provide for research and education will have an immediate impact on campuses across the nation. These funds will help preserve jobs for faculty, students, and post-docs, as well as for service providers in housing, food service, health care, and transportation.

Just as important, these investments will strengthen the science and engineering base that, in the long term, is essential to sustained economic growth.

In shaping the stimulus package, President Obama recognized that only a national commitment would allow NSF to continue doing what it does best—support fundamental research and education at the frontiers.

No leader of an agency, a department, or a nation is capable of moving forward without a close examination of the present and an eye to the future—the short view, and the long view. But those two perspectives are not enough.

A leader needs to constantly examine the perspectives of others, be they policymakers, workers, or stakeholders. There is always something that can be learned from different viewpoints.

I try to keep my eyes wide open and my ears attuned for top-down developments in national policies, priorities, and budgets. I listen carefully to the deliberations of the nation’s decisionmakers, such as the recent debates about how to stimulate the economy and recapture America’s leadership in innovation.

In recent months, the message I’ve been hearing—and one that I’ve worked hard to reinforce—is that investments in research and education are near the top of the list.

President-elect Barack Obama, even before he was sworn in, said this: “Whether it’s the science to slow global warming; the technology to protect our troops and confront bioterror and weapons of mass destruction; the research to find life-saving cures; or the innovations to remake our industries and create twenty-first century jobs...science holds the key to our survival as a planet and our security and prosperity as a nation....”

I took those words as my cue that there was a chance to redress the years of stagnant budgets and lack of growth in funding basic science and engineering.

That is indeed what happened. President Obama has led the charge to restore the national effort to rebuild a strong foundation of innovation, involving institutions across the country.

Listening for top-down information, while essential, is still not enough. An equally important role for a leader is to listen to the hopes, desires, plans and experiences of individuals.

At NSF, we are committed to engaging researchers at all levels in identifying challenges and shaping new directions that may lead to potentially transformative results.

We have many avenues for listening to the buzz out in the community. Aspirations and successes are reported at meetings, workshops, conferences, and visits to Washington, DC, as well as in the 45,000 research proposals we receive each year.

My job, at the helm of NSF, is to consider new ideas and funding requests in the context of national priorities, and to strike an appropriate balance.

I strongly believe that to negotiate the twists and turns of a dynamic global environment—and to stimulate creativity and innovation—requires multiple viewpoints.

Seeing clearly what makes innovation work, and what keeps it at the forefront of America’s agenda, is a challenge to which each of us can contribute our ideas and perspectives.

I look forward to the day when I can sit back and listen to your viewpoints, because some of you may be the ones who lead science and engineering into the future.

If the nation invites you to become a leader, I encourage you to accept. It can be an exhilarating experience, and this nation needs the very best.

Globalization

THE AMERICAN WAY IS BOLD AND IT’S FUTURE ORIENTED

Address by CHRIS KEARNEY, CEO, SPX

Delivered to the Detroit Economic Club, Detroit, Michigan, November 13, 2008

Thank you all very much—and I want especially to thank former Mayor of Detroit, Dennis Archer, for that warm and generous introduction.

Let me say at the outset how much I appreciate the hospitality today of the Detroit Economic Club and of your President, Beth Chappell, who has greeted me so warmly and made me feel so much at home.

I’m grateful not just for the Club’s hospitality to me today, but more particularly for your hospitality to the dozens of area high school students who are here for today’s luncheon. I just had the opportunity to meet with them in the pre-luncheon reception. What an impressive and inspiring group of young people! Through them, today, I think I’ve seen a glimpse of Detroit’s future—
something that's important to the CEO of a company with major operations in this area—and it's gratifying to see that that future is bright!

It's a great honor and a pleasure to have this opportunity to address such a distinguished group of business and civic leaders.

Presidents, Presidential candidates and captains of industry have all shared this platform before me, and it's with great humility that I add my thoughts to theirs today.

A lot has changed in the world since I first agreed to speak here.

We've had an historic election of the first African-American President in our history, a milestone everyone in our nation can take great pride in.

The election was a sweeping victory for President elect Obama and for his party that will significantly alter the political direction of this nation in the years ahead.

What direction that is—how the new administration and Congress deal with issues relating to our nation's international competitiveness—will be a critical question in the months and years ahead, and I'll be speaking about that more in a moment.

In the last two months, we have also seen the sub-prime crisis in the U.S. reverberate around the world, producing the most severe financial crisis we have seen in some 80 years. It has, I admit, tested even my optimism—but it has left that optimism about the U.S. and long-term trends fundamentally intact.

I believe that the extraordinary actions on the part of our government, and of governments around the world were all critically necessary to get liquidity back in the system.

And that's what this crisis is all about: liquidity.

Many of the underlying fundamentals that have been driving growth for many businesses are just as strong today as they were two months ago. My own company, for instance, is having one of its best years ever, though you wouldn't know that from looking at the ticker, for us or any of our industry peers over these last few weeks.

Clearly, in the short term it is going to be rough sledding. The long-term impact of this crisis will depend entirely on how long it takes for the recovery to gain traction.

The silver lining is that what happens beyond every low point is a massive opportunity for industrial expansion and wealth creation on the upside—if you are positioned to take advantage of it. If you are lean and competitive and prepared, the opportunities will be enormous.

I want to talk today about what some of those opportunities are.

They are the opportunities of a global economy that has been growing—the present recession aside—at a rate unprecedented in human history and is still positioned to grow.

In other words, I want to talk to you about globalization—which, even when times are good causes a certain degree of anxiety among many people.

But I want to focus on the positive side of the ledger: the pros, and not just the cons we usually hear about.

I want to talk from the perspective of a company with deep roots in America's industrial heartland that also has a dynamic global presence, and give you the reasons I think we should be fundamentally optimistic—why the long term trends of globalization will help to pull us out of our present slump.

First we need to recognize that globalization is a fact of life.

As Robert Samuelson, the popular economist, has said, “It is no more possible to undo globalization than it was possible, in the 19th century, to undo the Industrial Revolution.”

“It's not a choice,” he added, it's “a condition.”

A lot of people haven't been very happy with that condition.

When New York Times columnist Thomas Friedman came out with his book “The World is Flat,” it was presented as something of an unpleasant wake up call from America's sweet but overlong slumber.

Cheap labor in the third world was yesterday's problem, Friedman told us. The children of those third-world workers would soon be getting advanced degrees in engineering and computer science and Americans would then be providing the cheap labor to the rest of the world.

I exaggerate, but only slightly.

I look at the globalization somewhat differently.

I look at it, as I've said, from the opportunity side.

Since the fall of the Berlin Wall and the economic liberalizations in China and India, we've added some 3 billion people to the free world economy.

This has coincided with and contributed to a period of growth in the world economy that even with all its ups and downs is creating unprecedented opportunities for American business.

A Goldman Sachs study predicts that the world's middle class—which they define as people earning between $6,000 and $30,000 a year—will expand by a billion people by 2020, and two billion by 2030.

According to the McKinsey Global Institute, China's middle class will grow to become 76% of it's population by 2025, at the same time that the Chinese economy will be forced to increasingly shift from an investment to a consumption model.

There's little question that high rates of savings in both China and India—whose economy is expected to equal that of Britain's by 2020 -- will translate into a massive wave of consumer demand over these next decades.

This phenomenon isn't confined to these two powerhouses, either.

In the last two years, 124 countries have grown at a rate of 4 percent or more. This includes more than 30 countries in Africa, a continent that was once considered
destined to sit on the sidelines of the global economy. We’re having to invent other names for the so-called “emerging markets”—BRICs, for Brazil, Russia, India, China, being just the latest example—as many of them are well past the “emerging” stage. In fact, in the last two decades “emerging markets” accounted for more than 40 percent of the world economy.

This massive rise in living standards will mean a rising tide in demand for everything Americans make, mine, manufacture, grow and provide in terms of services. The almost clichéd example of this is Coca-Cola, whose CEO says that the world market of first-time consumers is increasing so rapidly that it’s as if we added the entire population of New York City every three months.

But it will be true of everything, from planes, trains and automobiles—which I’ll talk about more in a moment—to things we rarely think of—like the products that my company, SPX, makes, which aren’t generally household brands, but which are essential to making the world run more efficiently.

It will mean new, as yet undiscovered or un-developed markets that we can’t imagine yet, just as few could have imagined three decades ago that personal computers and telecommunications would be making the world’s industries hum today.

That’s the other side to this story of growth—the supply side, where the new ideas and new possibilities come from. All those bright middle class Chinese, Indians, and Africans will be getting an education. Yes, as Thomas Friedman warns, they’ll be competing with our kids. But they’ll all be competing in an ever-expanding universe of possibility as those same bright young kids invent new technologies and even new professions and disciplines to go with them.

I can assure you that when I was growing up in western Pennsylvania, my high-school guidance counselor didn’t suggest software engineering as a profession—because such a profession hardly even existed at the time.

So let’s get down to some examples of what this means for all of us, today.

SPX is a broadly diversified, global company providing innovative solutions throughout industry. Our three main areas are global infrastructure—particularly energy, which I’ll be speaking more about—process equipment and diagnostics tools.

But we started just shy of a century ago as the Piston Ring Company—about three hours northwest of here in Muskegon, Michigan—manufacturing piston rings for automobile makers. And the headquarters of one of our segments, Test and Measurement, is located in nearby Southfield—with additional offices throughout the Detroit area.

So our roots are here. Providing diagnostic equipment and essential tools to the auto industry is still a big part of our business. We know there’s no gainsaying the tough times for autos—times that are getting even tougher in this recession.

But let’s look at some of the encouraging trends abroad—trends that are bound to be affected by the global financial crisis but still point to the long-term outlook.

Take Russia, for instance. Who would have predicted a few years ago that Russia would develop into the largest auto market in Europe?

According to PricewaterhouseCoopers, Russia just overtook Germany to achieve that position, with a 41 percent jump in new car sales growth over last year, and with foreign cars making up almost half of those sales.

The rate of growth is phenomenal—64 percent in dollar terms—which compares to a mere 5 percent growth in Western Europe.

Meanwhile, Ford and GM saw sales in China rise 21 and 12.7 percent respectively over the first half of last year. Volkswagen, GM’s main competitor in China, grew somewhat faster, but they still only sell about one-tenth the number of autos there.

China’s car market is growing so fast, in fact, that it may not be too long before it becomes the world’s largest.

This is part of an accelerating and long-term trend that has seen overall vehicle exports from the U.S. more than double since 2000. Auto exports to Germany increased from approximately one billion to over 7 billion dollars in the same time period. Exports to the broader EU market have increased by a factor of five. Exports to China and other Asian markets have grown by leaps and bounds.

In the same time period, exports of auto parts to Eastern Europe have also risen strongly; and they’ve grown by some 70 percent to the Southern Cone countries of Argentina, Brazil and Chile.

No doubt these sales will suffer in the recession, but we’re talking about a long term trend as world growth regains its upward trajectory—and America must be positioned to take advantage of it.

For a few long happy decades after World War II, the United States didn’t have to try that hard to dominate the world economy. Certainly, that’s changed. We have to innovate and compete to win, but that’s been true for some time, and despite all the doom and gloom about American decline, we’re doing quite well thank you.

We still rank number one on the World Economic Forum’s Global Competitiveness index. And our runners up—Switzerland, Denmark, Sweden—are tiny economies compared to ours. You have to get to number five, Germany, and number eight, Japan, before you’re talking serious competition.

The United States is still home to seven out of the top ten world brands, fourteen out of the top 20, and 64 out of the top 100. That’s pretty dominant, if you ask me.

An even more telling survey was one conducted by Deloitte, which found that venture capitalists around the world still overwhelmingly view the U.S. as the best
country to invest in, with some 70% naming us the world's technology leader.

At SPX, we know from intimate experience how stiff the competition is out there, but we also know how great the opportunities are.

We operate today in more than 35 countries.

We provide critical industrial solutions that help our customers in industries such as food and beverage, power generation and oil and gas exploration ensure the high quality of their products—so the global explosion in consumer buying power is of real interest to us.

We provide advanced technology and diagnostic solutions that help our customers in the automotive and other industries deliver reliable service and develop new technologies—so we're a part of maintaining America's technological leadership.

We are also a significant player in the expansion of the global infrastructure market. This accounts for more than 50 percent of our revenues. Within infrastructure, power and energy alone account for one-third of our business, and the opportunities are almost limitless.

We're designing specialty valves and providing technical support and training for four new nuclear power plants that Westinghouse is providing in China. This is four, by the way, of some twenty-four reactors that China has planned and seventy-six that have been proposed for that country.

We are nearing completion on a cooling system for the air separation units at the Linde Group's petro-chemical facility in Qatar.

We supply cooling technology for the world's third largest solar power plant, Nevada's Solar One, helping generate power for 15,000 homes near Las Vegas.

In June we announced that we've been selected to provide engineering, design, manufacturing and installation for a steam-condensed system for geothermal plants in Iceland.

We have received approximately $700 million in orders from South Africa over the last year.

The global demand for energy is exploding—and that will continue in the long term.

Just yesterday, in fact, the International Energy Agency, in its annual World Energy Outlook report, predicted that oil will top $200 a barrel by 2030—well above the recent high of $147 last July—and argued that over $26 trillion in energy infrastructure will need to be invested between now and then just to keep pace with demand. Satisfying that demand, according to the IEA, will require adding an extra 64 million barrels per day of world oil production by 2030. That's the equivalent of adding almost six times the daily production of Saudi Arabia today to the world's oil supply.

Global investment in oil and gas is on track to grow by another 60 percent or so in the second half of this decade alone-reaching $470 billion in 2010 - but even that, the IEA suggests, may not be enough. China is expected to add 800,000 megawatts of generating capacity in the next eight years. That's the equivalent to the entire electrical capacity of Europe.

Today, China consumes only a third as much oil as the United States. By 2030, India and China together will import as much oil as the United States and Japan do today. 25

And while the recent more-than-halving of the world price of oil amid the global financial crisis is bound to have some dampening effect on these projections, for the long-term it's clear: the opportunity is out there.

And clearly, American industry can compete.

One big question on the horizon, however, is whether we will seize those opportunities.

This new Administration was ushered in on a promise of change and a wave of hopefulness in this country.

As I mentioned, the sweeping election victory of President-elect Obama and his party has given them extraordinary political momentum and the ability to get things done. Will they use it to develop a comprehensive, rational energy policy?

Will we finally get realistic about this nation's energy needs and what we need to do to make sure we can supply them?

At SPX, we believe wholeheartedly that renewables must be part of the energy mix. As I've mentioned, we are deeply involved in these new and exciting technologies.

But we have to be realistic. We have to do the numbers. In 2007, just seven percent of our nation's energy supply came from renewable energy. Almost all of that was hydropower and biomass. Take those out of the equation, and you find that solar power and wind together accounted for less than one-half of one percent of our energy supply. Let me repeat that: less than one-half of one percent.

Opportunities for growth in Hydro-power are limited—we're not going to be finding any new rivers to dam up in this country—and biomass has limitations of its own.

How are we going to grow a sector that, despite massive subsidies, still accounts for less than one-half of one percent into a significant source of energy in the next decade or more? The technology simply isn't there yet. And the infrastructure won't be built until the technology is there.

Also, energy efficiency alone won't solve the problem. It's important. Vital. But it won't decrease our demand for energy. That may seem counter-intuitive. It's certainly counter-cultural to say it. But the historical fact is that the more efficient a technology is, the more it's used.

This has been true since the invention of agriculture. Look at computers, they're billions of times more efficient than they were a few decades ago, and we use them more and they consume more power every year.
When Detroit actually performed a miracle in the 1970s and early 80s meeting new fuel efficiency standards, Americans drove more and consumed more oil than ever before.

Let me say something even more counter-cultural. Energy isn’t a bad thing. Energy is our friend. We need energy to grow. Lots and lots of it. And we especially need affordable and abundant energy to compete in an ever more competitive world.

The Chinese are making practical plans now to ensure they have the energy resources they need to grow. Shouldn’t we?

That means clean coal, a resource that this country has in abundance. SPX technology today helps clean coal plants produce energy for our nation’s energy needs.

This country has the largest coal reserves in the world. We are the Saudi Arabia of coal. If we want to compete in an ever more competitive world, shouldn’t we play to our advantage?

Coal is our advantage.

Being practical also means drilling for oil on-land and offshore—which Congress has just made at least theoretically possible in allowing the ban to expire at the end of this year. And it means building the refineries and infrastructure to support it.

It means building safe and incredibly efficient nuclear power plants—lots of them.

And, yes, we must continue to invest in renewable resources.

And we must do it all while protecting the environment, which I have no doubt we can do, if we put American industry and technological inventiveness to the task.

Ultimately, it’s our choice, and it’s a choice our nation will be making in the next four to eight years. We can aggressively pursue an abundant energy future, or we can opt out of the global competition.

The choice is that stark, I believe. Because if we don’t do it now, I don’t know if we’ll ever be able to catch up.

And believe me, once this recession is over, the race is on again, full tilt.

I believe in this nation. I believe in American industry.

And I’m optimistic, because I don’t think the American people will ever turn their back on history or willingly give up our economic leadership.

The American way is bold and it’s future oriented.

It’s worked for us for over two centuries, through every kind of changing circumstance, through ups and downs, though industrial revolutions and political revolutions and massive transformations of the world stage.

It will work for us in today’s global transformation, too.

It was largely American industrial, political and economic leadership that brought the world to this point of growth and opportunity.

And I believe it is American leadership that will continue to light the way.

Thank you all very much.

Leadership in a Time of Crisis

Address by LT. GEN. WILLIAM B. CALDWELL, IV, Commanding General, U.S. Army Combined Arms Center at Fort Leavenworth, Kansas, and oversees the Commandant, Command and General Staff College

Delivered to the Lincoln Lecture Series at the University of Saint Mary, Leavenworth, Kansas, February 12, 2009

If most of you are like me, you’d like the concert choir to come back out and sing a few more songs. That was wonderful. First, let me say that I’m flattered at your invitation to address this distinguished crowd tonight. What an honor to be the Lincoln Lecture Series guest speaker on this significant day, the bicentennial of Abraham Lincoln’s birth.

I do want to say a special thanks to the University President, Sister Diane Steele, for this invitation. I want to share with you all that my team and I collectively have already benefited from this event, far more than you’ll probably benefit from my words tonight. In the course of reading about Lincoln to prepare for this lecture, our team learned a great deal. I’m not sure I would have taken time to really reflect and think about the impact of Lincoln’s life on our country or the timeless leadership lessons he taught us if it were not for your invitation. Many of us have studied Lincoln from a military perspective and know how he led the Union Army as the Commander in Chief, but tonight we look at him in a broader light.

I would also like to thank the Academic Dean, Dr. Bryan Le Beau, Ms. Laura Davis and Dr. Steger for coordinating the event; Mr. Pete Payne and the MidAmerican Bank and Trust Company for sponsoring the event; and other distinguished guests for the privilege of being here tonight. To the Sisters of Charity – thank you; your dedication to academic excellence and preparing leaders for the future continues to reflect the commitment and vision of the sisters who came before you to Leavenworth in 1858, and who later founded St. Mary’s Female Academy in 1923. Your university remains relevant today and ready to face the challenges of tomorrow.

Thanks to the members of The University of Saint Mary ROTC program for your service to our country.

The color guard did an absolutely wonderful job tonight.