I’d like to join Dean Terry Blum in welcoming all of you to Georgia Tech and to Technology Square. We have an outstanding panel of technology leaders on hand to help us think about the future of Georgia’s technology industries, and I want to thank them for taking time to be with us. They are going to lead the way in taking us beyond merely predicting the future for Georgia’s technology sector to looking at the underlying questions of what will determine that future and what we can do to help shape it. And we hope you have come with your questions ready, because you will have an opportunity to interact with our panel.

This morning, we are meeting in a unique complex that will contribute to the future of technology in Georgia. Technology Square is an expression of Georgia Tech’s bold vision, which is to define the technological university of the 21st century, and it is an important component in providing the physical resources we will need to achieve this ambitious goal.

At its most fundamental level, Technology Square has transformed a section of the Midtown neighborhood that was previously characterized by vacant lots and abandoned buildings. It gives our campus its first real gateway entrance, which will be further enhanced when the Department of Transportation rebuilds the Fifth Street Bridge across the Downtown Connector, broadening it to include a park.

Technology Square also places Georgia Tech’s business education and service programs in the middle of Atlanta’s high-tech business community, helping to build a highly visible signature technology corridor for Atlanta and Georgia. This complex is an intersection of innovation – a place where the ideas and discoveries from Georgia Tech’s research endeavor meet the commercial marketplace and are translated into ideas, goods and services that serve the needs of the broader world.

Technology Square is the new home for our Management College and its executive education center, which have a very strong focus on entrepreneurism and the management of technology. Diagonally across Fifth Street is the new home for Georgia Tech’s Advanced Technology Development Center, the nation’s oldest university-based business incubator and one of its best. This co-location of the Management College with our incubator provides the College with a natural laboratory for our students. We are
now perhaps the only university in the nation where our students have a first hand opportunity to learn about entrepreneurism and to graduate with the expertise and desire to create new enterprises.

Next door to ATDC is the Technology Square Research Building, which houses IT and telecom researchers who collaborate with industry. And across Fifth Street is the Global Learning Center, new home to Tech’s professional education and distance learning. If you have a chance, stop by to see it. Its technology connects Georgia Tech to the far-flung corners of the world, and it is part of our emerging strategy to create an international virtual and physical network of global centers of technological education.

Only twenty-five years ago, the Biltmore was boarded up, Midtown seemed to be in an irreversible downhill slide, and Georgia had little to offer in the nation’s technology economy. The microelectronics and semiconductor revolution that was sweeping the nation was passing us by. And that was rudely and abruptly brought to our attention when we lost a major semi-conductor plant to Texas.

Fortunately, that was a learning experience that taught us the importance of being deliberate and strategic about building Georgia’s high-tech economic sector. The state of Georgia, Georgia Tech, and many good women and men set about catching up through hard work and investments that would make a difference. Among the investments were the creation of ATDC and the Pettit Microelectronics Center. Following shortly thereafter, the Georgia Research Alliance was added. The die was cast and the race was on.

Today we have the 11th largest science and technology workforce among the 50 states, and we gained this position despite some very stiff competition and an economic downturn. Specifically, we now rank 5th in telecommunications, 6th in computer software, and 7th in Internet services, according to the recent analysis by the American Electronics Association.

The Milken Institute has developed a more sophisticated high-tech industry index that goes beyond employment to combine five factors: 1) R&D conducted, 2) support for start-up companies, 3) education, 4) skilled workforce, and 5) the clustering of dynamic technology industries. By these more complex measures, Georgia ranks 15th in the nation and is the leading state in the Southeast.

The strategic investments we made over the past decade have clearly paid off and are standing us in good stead. Even as we move through a down cycle in the economy, they
put us in a good position to take advantage of the opportunities that lie before us. And this morning you are going to engage in an interactive discussion of how to do that.

Before that discussion begins, however, I would like to provide something of a broader context, especially in two regards: First, we need to be aware of the range of high-tech industries in Georgia – and it keeps broadening all the time. This is essential as we seek to diversify our portfolio so that in a downturn we are not too dependent on any one sector. Second, we must be aware of the global arena in which the competition presents a new challenge we must win.

There is a tendency to define Georgia’s technology sector in terms of advanced communications, computing, and software development. And that is natural, because this is the largest and most mature high-tech sector we have. It also merits discussion, because telecommunications in particular have been sailing through some stormy seas lately, and it will take some strategizing on our part to emerge as a leader as the industry’s paradigm shifts.

The Georgia Research Alliance recently asked Battelle to conduct a study of advanced communications and computing. And this study will provide some guidance on how to build on our strengths, so that we can make what is already a successful industry for Georgia even stronger and run out on the leading edge as the industry changes. I know that this morning’s thought-leader panel, together with many here in the audience, will also have insights into this challenge, and your input into the discussion of how to move to the next level will be very valuable.

But it is important to remember Georgia’s high-tech industry sector has broadened its reach in recent years, and we have growing opportunities in other significant fields, such as biotechnology and nanotechnology.

In the beginning of the last decade, Georgia was not known as one of the nation’s traditional biotechnology centers, but this has changed. We were fortunate to have strong existing assets in the form of Emory’s medical school, the CDC, the headquarters of the American Red Cross, Georgia Tech, the University of Georgia, and Georgia State. With growing investments throughout the business community, the Georgia Research Alliance, our universities, venture capitalists, and a strategic effort by the Atlanta Metro Chamber, we have seen Georgia’s biotech companies increase by almost 65 percent between 1995 and 2001, compared to a 37 percent increase nationwide. This rapid growth rate catapulted us from 16th to 9th in the nation in the size of our biotech industry. The states immediately ahead of us do not have that big a lead, so our goal is to move up into 6th place.
About 18 months ago, the Technology Practice of Battelle completed a study for the Georgia Research Alliance on the biosciences industry in Georgia. This study provides a strategic framework for how to effectively build on what has already been achieved to improve Georgia’s position even further. And Governor Perdue has been clear about his intent to strengthen Georgia’s leadership position by continuing a strategic focus on biotechnology.

Another emerging field is nanotechnology, which is the engineering of materials at the atomic level. Nanotechnology has the potential to revolutionize the production of virtually every human-made object and usher in a dramatic new age of technology. The nanotechnology wave that is now approaching us will be much bigger and more comprehensive than the microelectronics and semiconductor wave of 25 years ago. And this time we are not going to miss it; we are going to be strategic about capitalizing on it.

At Georgia Tech we saw the future a few years ago and realized in order to ride this wave, a new generation of research facilities was needed. This realization led to the idea of building one of the world’s first comprehensive nanotechnology research centers with Class 10 cleanrooms that could be used by universities working in collaboration with industry. Others bought into this vision, and with the help of an anonymous donor and the State of Georgia we are embarking on the design and construction of an $80 million Nanotechnology Research Center that will make Georgia the defining center of nanotechnology in the southeast and one of the nation’s leaders.

As we look ahead to the future, it is clear that these various high-tech fields will become increasingly intertwined. Scholars in the field of bioscience and biotechnology, for example, are increasingly turning to computer applications to help them with their tasks, and a new field called bioinformatics is emerging to do that. Georgia Tech was one of the first universities in the nation to offer an M.S. degree, and now a Ph.D. degree in bioinformatics. Hard on the heels of these developments, we are working in partnership with Oak Ridge National Laboratory to develop the world’s most powerful high performance computer and connect it with high speed, high capacity networks to Atlanta. Linked with these developments, discoveries in nanotechnology and photonics are expected to revolutionize advanced communications and computing, materials and energy production. Again, we at Georgia Tech have worked hard with the Georgia Research Alliance to position Georgia to assume a leadership position. We need to capitalize on the more than $1 billion the federal government will spend on nanotech and photonics research in the coming year alone.
So it is important that we continually redefine what we mean by Georgia’s “high-tech sector” to incorporate the diversity and rapid innovation that is increasingly coming to characterize it, and that we promote interaction among its various components, so that we do not miss the broader opportunities for collaboration.

We also have to increase our awareness of the global context in which we operate. We can no longer content ourselves with creating more jobs than Milwaukee or Tampa or San Francisco, because with the Internet and mobility of high tech talent, job creation can occur anywhere. A growing number of technology jobs are moving to places like India, China, and the Philippines as these nations develop skilled workforces and build modern network infrastructure. Chinese and Indian software programmers and engineers who work for $5,000 a year are the latest global economic reality, threatening not only our call center jobs but also some of our high end jobs.

The growing out-migration of technology jobs to places where the cost is much cheaper is a clear signal that we must strive to compete on a higher level. So, even more fundamental than the question of how to be strategic in lifting our technology industries up to the next level, is the question of how to promote the key to competitiveness in the 21st century with innovation. If you read this week’s BusinessWeek, you know that over the course of the next year Sam Palmisano, who is chairman, president and CEO of IBM, and I are chairing a National Innovation Initiative on behalf of the U.S. Council on Competitiveness. This initiative will examine through a series of regional meetings and a national summit what it takes to keep our nation’s innovative capacity in top form, so we can capitalize on and commercialize the coming new waves of technologies.

Of course, innovation is not the new thing that is created; innovation is the ideas, expertise, insight, and collaboration that came together and resulted in the invention. Innovation involves both ideas and expertise, and the opportunity to exchange and exploit them at a pace more rapid than our competitors. It involves collaboration across the lines of industries and academic disciplines. The states and the nations that will prosper in the coming years will be those who offer the most fertile, attractive environment for innovation anywhere in the world. To maintain our position as an economic leader, we must keep on innovating and creating the next generation of leading-edge industries and high-paying jobs.

Nobody knows exactly what the next big inventions will be, but if we cultivate an environment of innovation – an environment of new ideas and collaboration – we can be the ones who discover them and take competitive advantage of them. We can
continue to be the master of innovation, the leader in developing the next generation of tools and products in emerging fields.

The United States is still the technological leader of the world, but our competitive advantage is smaller than it was in the past. The strategies that got us to this point will have to be reassessed and shaped to work for the future.

As Sam Palmisano wrote in *BusinessWeek*, we tend to treat innovation as if it were magical. We think of Archimedes leaping up and crying, “Eureka!” And innovation does involve shining moments of insight and enlightenment. But creating an environment that encourages those moments to happen is something that involves deliberate and strategic planning.

And as you look ahead this morning to the future of technology in Georgia, I hope you will give thought to how we can create that environment that will enable us to sustain the innovation that will make prosperity possible for our children and grandchildren.

Thank you all for coming this morning and engaging in what we hope will be an unscripted, interactive exploration of the challenges facing Georgia’s technology sector. I hope we succeed in creating an environment where innovation will flourish and that this discussion will generate some innovative “Eureka!” insights that help our high-tech industries to grow and prosper.