REMARKS BY DR. G. WAYNE CLOUGH
Augusta Rotary Club, April 26, 1999

I was here in Augusta the first of the month to visit with my fellow Georgia Tech alumni, then again to enjoy a little bit of the Master’s. And I’m happy to be back today to visit with my fellow Rotary Club members, including my colleagues, Dr. Tedesco of the Medical College of Georgia and Dr. Bloodworth of Augusta State University.

I always look forward to coming to Augusta, because this is such a dynamic community. Any other city of this size would have been stunned by the loss of 10,000 jobs, which is what happened at the Savannah River Plant between 1992 and 1996. And the health care industry, the other bedrock of Augusta’s economy, was undergoing some consolidation at the same time.

So this is a community that has every right to be experiencing economic doldrums, but looking around Augusta, you’d never know it. “Augusta Tomorrow” brings together a behind-the-scenes group of civic, business and political leaders to steer a wide range of public-private projects through development in this community. And “Forward Together” is on target to meet its goal of 10,000 new jobs and $1 billion in corporate investment by the year 2000.

Enterprise Mill is taking shape. The Golf Hall of Fame is underway. Fort Discovery and the Morris Museum of Art are open. And you’ve got several new golf courses and hotels.

Over at the Medical College of Georgia, the new children’s medical center and the sports medicine center are open. The 21st century is shaping up as the age of biomedical discovery, and research at the Medical College puts Augusta right in the thick of it.

Georgia Tech is proud to be a partner with MCG in the Georgia Research Alliance. You may have always thought of scientists at MCG as working with the human body and engineers at Georgia Tech as working with industrial machines. But the human body is actually the ultimate machine, and it is made up of the world’s tiniest machine, the living cell. When you look at medicine from that perspective, you get biomedical engineering – the hottest new medical discipline around. And it brings Georgia Tech and MCG closer together.

All of us – the Augusta community with the Medical College and Augusta State, Georgia Tech – all of us share the same goal: to keep Georgia’s economic edge as we move into the next century.

One reason Georgia is a national leader in creating new high-tech jobs, is that we are also a leader in producing a high-tech workforce. Nationally, the number of engineering graduates has declined by 20 percent since 1986. But Georgia Tech has run against that grain. We have increased engineering enrollments by 20 percent since 1986, and we now graduate 2,500 engineers a year, making Georgia one of only a handful of states in the nation to have increased its production during the past decade.
At the same time we have been increasing our output of technology graduates, we have also been striving for higher levels of excellence. *U.S. News and World Report* recently ranked Georgia Tech’s College of Engineering third in the nation, behind only MIT and Stanford University.

That ranking reflects the growing excellence in the various schools that make up the College of Engineering. Most of them have been moving up in the rankings of their own particular categories during the past several years, and most of them now rank in the top 15 if not the top ten in the nation. No other university in the United States has improved as much or as rapidly as Georgia Tech.

We also rank high in CAREER Awards, which are presented by the National Science Foundation to honor outstanding young faculty members. Georgia Tech ranks third in the nation with 33 CAREER Award winners on our faculty. But the two universities ahead of us are much bigger than we are, giving us the highest concentration of CAREER award winning faculty of any university in America.

Our students are just as talented as our faculty – 14,000 top students; largest freshman class in history, and a record number of applications from prospective freshmen for next fall… more Georgia residents than any time in history. Many come from Augusta – we have about 325 students on campus right now from Richmond and Columbia Counties. In fact, Evans and Lakeside High Schools are among the top 25 schools in the state in terms of the number of students they send to Georgia Tech. Many of those students come back home to Augusta after they graduate, giving this community the largest Tech alumni club in the state outside of Atlanta.

Research at Georgia Tech has been increasing every year for the past five years. We had $255 million in research expenditures last year, and we are on track for another record year this year. Tech has been chosen as a partner in national research centers of excellence in several areas – electronic packaging, photovoltaics, manufacturing, broadband technologies, and the development of the next generation of semiconductors.

We also strive for excellence in serving Georgia’s businesses. Last year the 19 regional offices of our Economic Development Institute assisted more than 1,100 Georgia companies. Here in Augusta, our regional director Elliot Price and his staff have worked with a wide range of companies, including Monsanto’s new plant, E-Z Go Golf Carts, Greenfield Industries, Ruetger’s Organics, and even Goodwill and Easter Seals.

The regional office also brings together groups of business people around common interests. Right now, they have a group of about 25 people from a variety of industries meeting on ISO 9000 standards, and they recently sponsored a program on quality that was attended by over 100 people. The Bees and the Dawgs go head to head on the athletic fields in Atlanta and Athens, but in Augusta Georgia Tech is co-located with UGA. And the two of them are co-located with the regional offices of the State Departments of Community Affairs and Industry, Trade and Tourism in an economic development resource center with 13 total staff. It’s just up Washington Road at I-20.
As you can see, Georgia Tech has made a lot of progress, but we are not about to rest on our laurels. We want to continue our momentum. In fact, we need to continue or momentum, because the key to a high-tech future is talent. Silicon Valley is scrambling right now, because they are running out of talent. And the University System of California will try to do, by the year 2005, what Georgia has already done – increase its engineering graduates by 20 percent.

But we are not going to sit around and wait for them to catch up. We are going to press forward in our efforts to give the State of Georgia the high-tech workforce it needs for the 21st century. And I want to tell you about two new initiatives – the Yamacraw Mission and the Georgia Tech Regional Engineering Program – that are designed to do that.

The Yamacraw Mission began with a six-month study to define Georgia’s high-tech strengths, so that we would not be duplicating or replicating what someone else was doing. The study indicated three areas of emerging technology where Georgia was strong compared to other places, both nationally and internationally: broadband technology, content control, and optical networks.

These findings were a pleasant surprise to us for two reasons: First, they confirmed the decision of the Georgia Research Alliance to concentrate on advanced communications, and affirmed the strength the Research Alliance has given us in research facilities and faculty. And within the Research Alliance, Georgia Tech was pleased to be a key player in the strengths the study identified.

Second, the three areas identified are not tied to a particular technology, but rather underlay a variety of technologies that will be needed in commercial electronics, computers, telecommunications and entertainment. Thus, our strengths match up with the requirements for several essential components of a new economy built on technology.

After the study, the next step was to define what it takes to be a winner in this high-end sector of the economy. The conclusion was that we need a sizable workforce of design engineers and computer scientists who have specially tailored skills. So the goal of the Yamacraw Mission is bold – to produce 2,000 of these specially tailored design engineers and computer scientists per year by the year 2004. Most will come through traditional four-year college programs, many from Georgia Tech but also from other schools around the state. Others will already have degrees in related fields and will get the training they need from continuing education courses.

The Yamacraw Mission ties together state government, the Georgia Research Alliance, higher education and private industry as partners. And we are very pleased and excited to have the strong support of Governor Barnes and the General Assembly, who have provided $13.5 million.

The Georgia Tech Regional Engineering Program also has tremendous potential to help this state with the high-tech workforce it needs. The idea behind this program is to look at the actual engineering needs of a region of the state, and then involve the University System units in that region as partners in providing degree programs in those particular types of engineering.
For a number of years, we‘ve had the Regents‘ Engineering Transfer Program, in which University System units around the state have offered the first two years of Georgia Tech‘s engineering curriculum on their campuses. Then the students transfer to Georgia Tech to get their advanced and specialty courses during their junior and senior years.

The Regional Engineering Program – we call it GTREP for short – builds on this transfer program. It will use a combination of distance learning and new courses to add the junior and senior years of an engineering degree at the regional level.

We have begun to build the GTREP model in the coastal region, with Georgia Southern University, Savannah State University and Armstrong Atlantic State University as our partners. The Governor and General Assembly have provided funds to equip labs and distance learning classrooms in Savannah and Statesboro. The funding will also hire as many as six new faculty members, most of whom will be based in coastal Georgia… because you cannot do engineering totally by distance learning. You have to have hands-on lab work and personal advising by faculty who understand the technological implications of the workplace and the connections between coursework and the workplace.

This combination of new faculty and new labs in the region plus distance learning delivered from Georgia Tech will enable us to offer full four-year degree programs in civil and computer engineering in coastal Georgia, beginning with the new school year in August. And we expect to award the first degrees in 2002.

The Georgia Tech Regional Engineering Program is designed to have an economic impact. Computer and civil engineering were chosen as the first degrees for coastal Georgia, because there is a documented need for graduates of these programs in that part of the state. And we want to develop some technical courses that are tailored to meet the needs of the region.

Beyond these two bachelor‘s degrees, the next step is master‘s degree programs in computer engineering and environmental engineering. Again, these degrees were determined by the needs of the region. The coast is a very environmentally sensitive region, and its continued development must be carefully engineered. The Skidaway Institute of Oceanography will become another partner in the effort to address this educational need.

This initial Regional Engineering Program in southeast Georgia is a pilot, a model that we hope to expand to other parts of the state in conjunction with the University System‘s desktop distance learning network. Our goal is not merely to make engineering education more widely accessible across the state, but also to meet the workforce needs of individual regions of the state and to open new opportunities for future economic development.

It‘s always difficult to know what the future holds. In the late 1940s, computers ran on vacuum tubes and were as big as a room, and T.J. Watson, who founded IBM, predicted that we “may need six computers worldwide, for government, etc.” As recently as 1977, Ken Olsen, founder of Digital Equipment Corporation, said, “There is no reason for any individual to have a computer in their home.”
So as we get close to the new millennium and futuristic predictions like these begin to proliferate, it’s a good idea to take them with a grain of salt. The twists and turns of technology can be unpredictable, but there is one thing we know for sure. And that is the value of investing in people.

A skilled, educated workforce is the best business capital Georgia can offer. That’s the point of the Yamacraw Mission and of GTREP. And at Georgia Tech we are going keep looking for creative new ways to continue to educate the workforce Georgia needs to thrive in the 21st century and beyond.