2006 ANNUAL REPORT

DEFINING THE FUTURE

REINVENTING THE EDUCATION EXPERIENCE
RESEARCH RESULTS THAT MATTER
PROVIDING GLOBAL LEADERSHIP
BUILDING AGILE, COMPETITIVE ECONOMIES
HELPING LOCAL COMMUNITIES THRIVE
RESPONDING TO A NATIONAL DISASTER
When the National Cancer Institute announced the designation of seven National Centers of Cancer Nanotechnology Excellence last year, the list was composed mostly of the renowned medical schools at prestigious universities that one would expect to find. What was undoubtedly surprising to some, however, was the inclusion of Georgia Tech among the group. The fact is, Georgia Tech’s partnership with Emory University in a joint cancer nanotechnology research center is illustrative of how the Institute is reshaping what it means to be a top-tier research university in the twenty-first century. In addition to continued renown in core areas such as logistics, manufacturing, materials, aerospace engineering, and transportation, Georgia Tech has used its genuinely interdisciplinary environment to build new strengths in biotechnology, nanotechnology, photonics, bioinformatics, high-performance computing, technology policy, and systems biology. This ability to be flexible and leverage its strengths has allowed the Institute to take on bold new challenges such as making breakthroughs in treatments for cancer and other deadly diseases, developing renewable energy sources while helping reduce energy consumption, creating the next generation of computer chips, and understanding the nature of the growth in intensity of hurricanes.

What all of these efforts have in common is their reliance on collaboration, not only among academic disciplines on Tech’s campus, but also with other research universities, medical education and treatment institutions, government, and industry. Author and New York Times columnist Thomas L. Friedman praised Georgia Tech’s approach in his recent book, *The World is Flat*. “What the Georgia Tech model recognizes is that the world is increasingly going to be operating off the flat-world platform, with its tools for all kinds of horizontal collaboration,” Friedman wrote.

For many years, Georgia Tech has been making strategic choices that have recognized both the coming prevalence of the flat-world model and the importance of being equipped to serve overarching national priorities. As a result, our priorities are now closely aligned with those of the nation. If we continue on our current trajectory, there is no doubt that we will soon emerge in the public consciousness as one of the world’s most inventive and relevant institutions.

Georgia Tech is boldly reshaping the concept of the research university, even as the Institute itself is being reshaped by the innovative research thrusts it is embracing. The pages of this Annual Report are filled with examples that illustrate how Georgia Tech is defining the future of the American research university.
Innovative Academic Programs

After two years of intensive work, Georgia Tech launched its International Plan in the fall of 2005, enabling students to add an international dimension to their major. Participants take courses in modern languages, global economics, and international affairs, and spend two terms abroad studying or working in a co-op assignment or internship. “I think we’ve come up with the right model for adding an international dimension,” said Associate Provost for Institutional Development Jack Lehmann. “As I travel and give talks and presentations on what we’re doing, it is very clear that no one else is doing anything like this. I think it is going to position Georgia Tech competitively.”

The International Plan dovetails with new interdisciplinary degree programs begun last fall by the Ivan Allen College of Liberal Arts. Two of the degrees combine modern languages with either global economics or international affairs. A third offers a joint degree in economics and international affairs (EIA), providing students more of the policy analysis and strategic planning skills in economics and international affairs that employers look for.

“When you study international affairs, your level of analysis is usually the nation state, and you really can’t conceive of the nation state as a political entity without understanding the role that economics plays,” said Andrew Miles, a student who changed his major from international affairs to the EIA program. “I took three economics courses before I knew this new major existed. The practical side of me felt that adding economics to my degree would make me more marketable in the private sector.”

Creative new programs like EIA, combined with intensive recruitment efforts, have given the Ivan Allen College an advantage among the many liberal arts colleges and programs available to students. The college has experienced a 40 percent enrollment increase over the past five years.

Another rapidly growing liberal arts program is the Music Department in the College of Architecture, which now offers a master’s degree in music technology, the first degree in Tech’s history to combine performing art with technology.

“We would like students to take part in our effort to innovate and develop future technologies for music performance, composition, and education,” said Gil Weinberg, director of the Music Technology Program.

Highly Accomplished Students

Achievement and recognition are nothing new for Tech students, and 2005-06 was no exception. Jarret Lafleur and Isaac Penny were among the sixteen Astronaut Scholars named by the Astronaut Scholarship Foundation. Selected for motivation, imagination, and exceptional performance in science and engineering, each scholar receives $10,000.

Lafleur, a President’s Scholar and aerospace engineering major, was also named a USA Today Academic All-Star. He presented a wing morphing design to NASA for use on Mars that apparently represents the first instance of a published full design of such a vehicle for a planet other than Earth.

A mechanical engineering major, Isaac Penny is a fourth-generation engineer who plans to develop an air transportation system for third-world countries by using his knowledge and skills as a pilot and leader in “ambitious technical projects.”

Biomedical engineering major Ryan Haynes was the only 2006 Marshall Scholar from a Georgia public university. He now is a master’s student in nanotechnology enterprise at the University of California at Berkeley. He presented a wing morphing design to NASA for use on Mars that apparently represents the first instance of a published full design of such a vehicle for a planet other than Earth.

When I hire someone today, I look for different skills than I did ten years ago. Today, it is not unusual for good candidates to have global references and experience on projects and assignments around the world. I think we must prepare our graduates for that type of career because they aren’t likely to spend their careers working in one company or even in one country.”

—Theodore Kennedy, Founder, BE&K.

Football star works on Bolivian latrines

Faced with a choice between spending the summer helping to design environmentally friendly luxury condos less than a mile from campus or designing and building solar latrines to improve sanitation in Bolivia, Georgia Tech All-American wide receiver Calvin Johnson chose the latter project without hesitation.

“My response was brief and to the point: I want to help the less fortunate.”

Four billion people globally suffer from chronic waterborne disease, and an estimated 13 million children die annually of conditions linked to a lack of adequate sanitation. In a developing country like Bolivia, poor sanitation contributes to limited water supply and attracts disease-carrying insects, posing a serious health risk.

“You realize how fortunate you are when you see that people around the world don’t have clean water and sanitation,” Johnson said.

“Yo...
Too often the value of breakthrough and Treatment
Healthcare Diagnostics and Treatment
Too often the value of breakthrough and treatment for debilitating and life-threatening illnesses is diminished by a healthcare system that is inefficient and plagued with high error rates. To address this longstanding problem, a new institute at Georgia Tech and Emory University, the Health Systems Institute, is working to improve communication among the players in healthcare, including patients, doctors, administrators, and insurers.

“Healthcare is the industry that is the most information intensive, yet it has to support and utilize all this information with technology and tools that are lagging far behind other industries,” said François Sainfort, director of the HSI and the William W. George Professor of Health Systems at Georgia Tech. “Our goal is to streamline the industry and decrease healthcare costs for consumers. The idea is to develop and implement systems that save lives and save money in such a way that everybody benefits.”

The HSI’s key goal is to use new technologies to provide a complete electronic patient record that helps doctors and health professionals make better-informed and more efficient decisions.

For example, cancer patients could enter their preferences, medications, and treatment in a computer or kiosk interface in a waiting room. By the time the patient is seen, the doctor already has a printout of all the patient’s responses and can make a more personalized decision on treatment strategies.

The HSI is also working on a handheld device that would give doctors and nurses complete access to patients’ records, test results, and vital signs as well as connecting them to the pharmacy and administrative offices.

Echoing one of the core principles of the HSI is the work of Jeffrey Skolnick, a renowned systems biologist who joined the Tech faculty last spring as a Georgia Research Alliance Eminent Scholar in Computational Systems Biology. Systems biology integrates mathematics, physics, chemistry, and biology with high-performance computing and engineering to explore the vast opportunities created by the sequencing of the human genome. For example, by applying bioinformatics and systems biology to the development of new drugs, Skolnick can reduce the number of compounds drug developers must screen by a factor of ten, creating cost savings and shortening the time to market.

Supporting Skolnick’s work is the IBM Razor, one of the world’s most powerful supercomputing clusters.

“Georgia Tech and its School of Biology are doing some incredible work in cancer research,” said Skolnick. “The Institute has built a collaborative environment for meaningful interdisciplinary research, especially in the areas of science, computing, and engineering. The environment cuts across schools and research centers and offers opportunities to take new ideas, scientific breakthroughs, and business application ideas from theory to practice.”

The cancer research in computational systems biology complements other cancer research underway at Tech. In another project, a father-son research team from the University of California, San Francisco (UCSF) and Georgia Tech is using gold nanoparticles to detect cancer, then destroy the malignant cells.

“In an earlier study, we showed how gold nanoparticles could be bound to malignant cells, making cancer detection easier,” said Ivan El-Sayed, assistant professor of otolaryngology at the UCSF Medical Center. “Now we have examined how the particles’ ability to absorb light helps kill those cancer cells.”

Ivan El-Sayed conducted the study with his father Mostafa El-Sayed, director of the Laser Dynamics Laboratory and a chemistry professor at Georgia Tech.

“The real potential is to design instrumentation to allow noninvasive detection and treatment in living humans,” said Mostafa El-Sayed. “The particles can be used to create multiple designer agents targeted toward specific cancers. Much work still needs to be done, but at some point, we hope to be able to inject these compounds into patients with cancer in a search-and-destroy mission. Finding cancers not apparent to the eye will help physicians detect cancers earlier. Exposing the cells to the correct amount of light would then cause destruction of the cancer cells only and leave the healthy cells alone.”

A fervent desire to find cures for cancer and other deadly diseases led leg-endary Home Depot founder Bernie Marcus to commit $15 million to Georgia Tech’s Marcus Nanotechnology Building, which is now under construction and will be the largest facility of its kind in the Southeast.

“It is hard for people to understand what can come out of the nanotechnol-ogy world, but we do understand the benefits it can produce for medicine,” said Marcus. “The combination of Georgia Tech working with other universities in this state doing nanotechnology research will give us great potential in solving terrible diseases.”

While technology can help to solve the problems nature presents, the reverse is also true. As early as the fifteenth century, Leonardo da Vinci looked at the nature of inspiration, and Georgia Tech researchers are following his example in the search for solutions to complex engineering problems.

Underlying the evolving field of bio- and bio-inspired design, is the premise that every animal must solve a particular problem set to survive, so every animal or cell uses a design solution for that problem set.

“The natural selection and evolution of species provide us with the longest engineering design test of all time,” said Jeannette Yen, professor of biology. “By studying how organisms solve the problems they face, we get to benefit from the millions of years of knowledge embedded in the DNA of each creature.”

Georgia Tech launched the Center for Biologically Inspired Design (CIBD) to encourage the interdisciplinary research that was already taking place across campus. Twenty researchers from various fields comprise the Center’s membership.

Last spring Georgia Tech hosted the first International Symposium for Biologically Inspired Design and Engineering, which featured snapshots of biomimetics research in progress across the country. The work of several Georgia Tech faculty was highlighted:

• Hang Lu, chemical and biomolecular engineering, is studying how sensory- and memory-related genes are expressed and regulated in tiny micro-sized worms with the goal of creating brain-inspired sensors and gaining new insight into how memories are formed in the human brain.

• Steven DeWeerth, biomedical engineering, is working to understand how the body communicates with joints and muscles for movement and balance in order to design robots and prosthetics that replicate the naturally fluid movement of animals and humans.

• J. Todd Streelman, biology, is looking at fish jaws to better understand the mechanical properties of jaws and teeth under stress, research that could lead to novel strategies for tissue engineering, repair, and replacement.

Environmental Sustainability and Alternative Energy

Higher gas prices and ongoing unrest in the oil-rich Middle East have rapidly transformed alternative energy from the purview of hard-core environmentalists to a national imperative. A group of experts in science, engineering, and public policy from Georgia Tech, Imperial College London, and the Oak Ridge National Laboratory has recommended a comprehensive research and policy plan aimed at increasing the practicality of using biofuels and biomaterials as a supplement to petroleum.

“We can readily address, with research, 30 percent of current transportation fuel needs, but reaching that goal will require five to ten years and...
significant policy and technical effort,” said Arthur Ragauskas, Tech professor of chemistry and biochemistry and a lead researcher on the project.

Significant improvement in processing biolasts is essential to make them a truly practical alternative to petroleum. The group envisons a fully integrated biorefinery, designed to take advantage of advances in plant science and innovative biomass conversion processes and equipment to produce multiple fuels and products from biomass.

In a separate initiative, Chevron Corp. and Georgia Tech’s Strategic Energy Institute have formed a $12 million alliance to develop cellulosic biotexts and hydrogen into viable transportation fuels. The production of transportation fuels from renewable resources such as forest and agricultural waste is viewed as an important advancement over first-generation biofuels such as ethanol and biodiesel, which are made from agricultural crops such as corn, sugarcane, and soybeans.

Once developed, this second-genera
tion processing technology will allow waste products to be converted into renewable transportation fuels, opening the door to a new phase in alternative energy, said Rick Zalesky, vice president of Biofuels and Hydrogen at Chevron Technology Ventures.

Georgia Tech is also one of seven research universities in the National Science Foundation’s (NSF) $15 million Engineering Research Center (ERC) for Compact and Efficient Fluid Power. Industry partners are augmenting NSF funding with $3 million, and member universities are contributing an additional $3 million.

Fluid-power technology encompasses the use of pressurized liquids or gases to transmit power. The $33 billion industry ranges from simple hydraulic jacks for cars to sophisticated aircraft flight control actuators. Each 10 percent improvement in the efficiency of current fluid power use will save about $7 bil-

lion a year in U.S. energy costs.

Researcher will also work to develop hybrid vehicles that will be less expensive and more efficient than current electric hybrids. A 10 percent improvement in the efficiency of passenger-car energy use nationwide will save about $10 billion a year.

Concern for environmental sustain-

ability can be clearly seen among the start-up companies emerging from Georgia Tech’s labs. More than a half-
dozens early-stage companies in VentureLab, which helps commercialize faculty inventions, are pursuing clean technologies ranging from renewable fuels and high-efficiency solar cells to tiny jet-like devices to reduce aircraft fuel consumption.

“Our clean-tech companies have one aim in common: to use Georgia Tech discoveries to make a number of things happen in a more environmentally sen-
sitive and economically viable way,” said Stephen Fleming, Georgia Tech’s chief commercialization officer.

“Mounting concern has made clean-
tech and renewable energy an important business area,” said Ben Hill, a VentureLab business advisor who works with clean-tech and renewable energy companies and projects. “We think that a lot of Georgia Tech research and development companies that will help Georgia’s economy as well as the environment.”

Combating Bioterrorism

Formerly the stuff of science fiction plots, bioterrorism has now become an all-too-real threat. Research conducted jointly by Georgia Tech and the U.S. Centers for Disease Control and Prevention (CDC) has yielded a method that rapidly and accurately identifies Coxiella burnetii, a potential biological terrorism agent.

In addition to being a public health threat, Coxiella burnetii is considered a bioterrorism agent because of its long-
term environmental stability, resistance to heat and drying, extremely low in-
fec tious dose, aerosol infectious route, and history of weaponization by various countries.

“Because of its potential use as a bio weapon, we needed a method to detect Coxiella burnetii at an early stage, and we needed to be able to determine which strain is present so authorities can determine the geo-

graphic area from which it came,” said Facundo Fernandez, assistant professor of chemistry and biochemistry.

Fernandez and PhD student Carrie Young, a chemist in the CDC’s Environmental Health Lab, collaborated with CDC researchers to combine mass spectrometry—an analytical technique to study ionized molecules in the gas phase—with a mathematical data analy-
sis technique called partial least squares analysis.

Not only is this combination of these techniques a novel concept, but this research also represents the first time that Coxiella burnetii has been detected at the strain level with a rapid detection process, Fernandez noted.

“The next step,” Fernandez said, “is to fine-tune our model and increase the number of strains we can identify.”

Fernandez’s colleague, Associate

Professor L. Andrew Lyon, is leading a research effort to create technology capable of detecting trace amounts of biological or chemical agents in a matter of seconds, compared to traditional methods that can take hours or even a day. It could greatly enhance the ability of authorities responding to a biological or chemical weapons attack as well as increase the speed of medical testing.

Using a process similar to that used by the human immune system, Lyon employs reusable hydrogel microlenses so small that millions of them fit on a one-inch-square plate. When antibodies on the microlenses come into contact with the antigen they are set to detect, they bind, causing the lenses to swell and become less dense. Scientists view-
ing an image projected through the tiny lenses know the lenses are swelling when the focus changes.

“These are reversible, so you can use the same lenses over and over again,” said Lyon. “This is the first time some-
one has done this with microlenses.”

Once developed into a device, the microlenses’ ability to conduct rapid chemical and biological tests could lead to significant savings in healthcare costs as many blood tests could be run in a physician’s office rather than sent to an outside lab. Such a device could also rapidly detect and identify a toxic chemical in the event of a spill or terror-

ist attack.

Lyon said the next step in developing microlens sensors is to test the technol-

ogy’s performance in complex biological fluids such as blood serum.

“Nanotechnology has the potential to impact the production of nearly every human-made object, and the Georgia Tech Nanotechnology Research Center will be a critical resource for enabling its development”—Rod Atkins, Vice President, IBM Systems and Technology

Taking the lead in robotics

The Robotics and Intelligent Machines center (RIM@Georgia Tech) is a new interdisciplinary research center that will leverage the strengths of the

Colleges of Computing and Engineering, combined with support from the Georgia Tech Research Institute and the Office of Research.

Robotics industry associations in North America and Japan expect the global robotics market to expand signifi-
cantly in both the service and personal robotics fields over the next five years. RIM@Georgia Tech expects to make a significant contribution to growth and innovation within this busi-

nessing industry.

RIM@Georgia Tech will serve as the flaghip for Georgia Tech’s robotics efforts, coordinating the university’s capabilities in the field under one roof and facilitating the transfer of research results to the industry,” said Henrik Christensen, KUKA Chair of Robotics and distinguished professor in the College of Computing, who directs the Center. “This new Center allows Georgia Tech to maximize its estab-
lished relationships with industry lead-
ers and its strengths in robotics and intelligent computing, control, and mechanical engineering.”

Robert Present, Georgia Tech’s vice president, said Georgia Tech will develop both undergraduate and doctoral degree programs tailored to best enable students to understand and drive the future role of robotics in society and industry.
applied research center outside the (RFID), biotechnology, and energy. Tech’s research strengths—digital areas that mirror Ireland and Georgia facility will focus on four technology applied research division, the Georgia Ireland. Operated by the Institute’s Research Partnerships Economic Development and "providing innovative solutions through relationships with industry valued in excess of $24 million, and at full operation, it of research programs and collabora- of the research efforts with industry-partners. The national student organization that was a natural place to look," said Dan professors in the School of Civil and Environmental Engineering who partici- with the same types of issues only on a much larger scale. They have several projects that cross international bor- South America, and the United States. "The emerging global university is set to be one of the transformative institutions of the current era."—The Economist, September 2005

**European Campus in Metz**

Europe provides inspiration for Atlanta transportation project

Inspiration often comes from unex- pected places. John Crocker, a civil engineering PhD student and Fulbright Fellow, was trying to identify the problems underlying Atlanta’s traffic issues when he realized they could be the result of local government boundaries. "Transportation officials had infra- structures plans designed to meet the population demand of the area," said Crocker. "When I looked to find out why it wasn’t built, I found out that it was the projects that crossed county borders that weren’t constructed. I kept reading about the European Union and wondered whether they were dealing with the same types of issues only on a much larger scale. They have several projects that cross international borders and need to have the cooperation of several governments." For part of his Fulbright Fellowship, Crocker researched several major European Union transportation projects that cross member state lines, such as the Trans-Alpine tunnel between France and Italy. He wondered if there was a way to study how the European Union dealt with its transportation issues and see if those lessons could help solve some of the issues in Atlanta and the United States.

**GT Ireland**

Georgia Tech’s dramatic rise in prestige and recognition could not have happened without the Institute’s increasing engagement in international research and economic development partnerships and assistance to nations with infrastructure challenges. Cross, GTRI director and Georgia Tech vice president. “This initiative directly supports Georgia Tech’s vision to define the technological university of the twenty-first century.”

GT Ireland will work closely with Irish corporations and universities, the Georgia Tech research community, and U.S. companies to provide companies on both sides of the Atlantic with industry-focused research and development that bridge the gap between academic discovery and commercial success.

Cross, GTRI director and Georgia Tech vice president. “This initiative directly supports Georgia Tech’s vision to define the technological university of the twenty-first century.”

"I learned more in a few days than I could have learned in a year of school," said Laura Prenenko, an undergraduate professor in the School of Civil and Environmental Engineering who partici- pated in the group. "And we’ve got plenty at Georgia Tech."
Planning for Economic Success

Georgia Tech received a great deal of attention last year when Pulitzer Prize-winning author and New York Times columnist Thomas L. Friedman showcased the Institute’s approach to education in the re-release of his book The World Is Flat.

“The World Is Flat, Friedman demystifies the new world that technology, communication, and increasing globalization are creating. In the chapter “The Right Stuff,” he describes how Georgia Tech has worked to attract and retain students with more wide-ranging interests, with the thought that these students are more flexible and able to adapt and work across disciplines.

“Very few presidents of premier technology universities boast about their tubas as much as their test tubes,” Friedman wrote. “But [Wayne] Clough has reason to boast, because my guess is that by making Georgia Tech sing—and by making other user-friendly additions to the undergraduate teaching system, and by making education overseas easily available for Georgia Tech students—he is producing not just more engineers, but the right kind of engineers.”

Friedman also highlights the College of Computing’s re-design of the computer science major into “threads” that combine computing with other fields, such as media or information, to produce graduates with broader knowledge and experiences than the traditional fixed set of computer science skills.

Flexibility and agility were prominent elements in the Georgia Tech Economic Impact Study released in spring 2006. The study, sponsored by ten of Georgia’s top companies, found that greater flexibility would increase the economic impact and competitiveness of Georgia Tech and the state’s other public research universities.

Conducted by the Huron Consulting Group, the study showed that Georgia Tech provides a $3.9 billion economic impact within the state—a return of almost $15 for every state dollar appropriated to Tech.

Implementing the changes the study recommends would result in more high-end jobs, improved access to intellectual capital, development of the workforce of the future, expansion of a vibrant research enterprise, creation of new private-public partnerships, and expansion of infrastructure for economic growth.

In addition to efforts at the state level, President Clough co-hosted an Innovation Summit for the Southeast region last fall. The Summit expanded on previous National Innovation Initiative discussions focused on helping the United States retain and expand its technological prominence. The large group of corporate, government, and academic leaders who attended the Innovation Summit created a visionary set of recommendations for bolstering the South’s potential for innovation leadership.

“We are confident that SEM will find Georgia an outstanding location for its research and development headquarters for these important new technologies,” said Governor Sonny Perdue. “Its presence here will add to the state’s growing reputation as an environment that encourages and nourishes science and innovation.”

Italy-based Pirelli also opened its North American headquarters at Technology Square last year and signed a five-year R&D agreement with Georgia Tech, making Atlanta the North American operational branch of Pirelli Labs, the company’s advanced research center based in Milan.

“By combining their respective know-how, Pirelli Labs and Georgia Tech will be able to develop new cutting-edge broadband access and optical technologies for the North American market,” said Giorgio Grassi, CEO of Pirelli Labs Optical Innovation. “We view our partnership with GEDC as a major strategic asset in our future broadband activities.”

“Georgia Tech has provided Southern Company, the state of Georgia, and the Southeast with a great resource for innovation, qualified graduates, and research. It is in our best interest to keep Georgia Tech competitive and help all our state research universities achieve the flexibility they need to compete with their peers across the world.”—David Ratcliffe, CEO Southern Company

**BUILDING AGILE, COMPETITIVE ECONOMIES**

As one of the world’s foremost technological universities, Georgia Tech takes very seriously its responsibility to develop new technologies that stimulate economic activity. This is, in fact, one of the Institute’s core values.
HELPING LOCAL COMMUNITIES THRIVE

As a respected and credible institutional citizen, Georgia Tech ventures beyond the realm of its own priorities to address communities’ needs. Last year, Tech continued its longstanding involvement with local K–12 students and began collaborating with the city of Atlanta to explore the potential and impact of the proposed BeltLine.

Academic Support for K–12 Students

How do high schools provide advanced courses to those few bright students who have completed all the math classes they offer? A Tech pilot project used telecommunications to provide advanced calculus courses to thirty-four students in five Fulton County high schools.

“This joint venture is one of many we hope to develop with Georgia Tech,” said Judy Dentison, director of core academics for Fulton County Schools. “We have many students who need the challenge of college-level classes, and through this distance learning effort we’re able to provide that in a cost-effective way.”

The distance learning class enables high school students to earn both high school credits and college credit. The HOPE scholarship program pays the tuition costs to Georgia Tech, and the Fulton County School System pays the transmission costs and provides the video-conferencing equipment required for each school.

“It was a little tough getting used to the fact that your teacher isn’t in the room and is on the screen, but I’ve gotten used to it,” said Molly McLaughlin, a senior at Roswell High School who hopes to study chemical engineering.

“The distance learning calculus classes are going to prepare me for college so I’ll know better what to expect next year.”

“This partnership is providing a service to Georgia students that they couldn’t get elsewhere,” said Tom Morley, professor in the School of Mathematics who teaches the distance learning calculus class. “There are many small and large counties that have the same issues. I’d really like to grow this program to address the specialized needs of students throughout the state.”

Georgia Tech’s Institute Partnerships also encourages Tech students to volunteer as both mentors and tutors for K–12 students. At the elementary level, Institute Partnerships and Tech’s Center for Education Integrating Science, Mathematics, and Computing collaborate to provide math tutors at Bethune and Centennial Place elementary schools.

To further assist Centennial Place Elementary, Institute Partnerships enlisted the support of Johnson Controls, a multi-billion dollar corporation known for its invention of the electric room thermostat. Johnson Controls sponsors a full-time Tech co-op student to provide technology support at Centennial Place, supplying the school with much needed assistance and offering Tech students program administration experience not available in any other co-op environment.

“It is becoming increasingly important for primary and secondary educators to interact with institutes of higher education,” said Andrea Ashmore, director of Institute Partnerships. “This interaction opens up whole new worlds for K–12 students and helps prepare them for a lifetime of learning, which we hope will interest them in attending college.”

Tech Helps Explore Atlanta BeltLine’s Potential

Obesity is an all-time high in the United States. Asthma, diabetes, and high blood pressure plague an increasing number of Americans. The relationship of these health problems to the built environment is clear, yet few have examined the health-related impacts of proposed projects and policies.

This gap is being filled by a Health Impact Assessment (HIA) of the proposed Atlanta BeltLine, conducted by the Center for Quality Growth and Regional Development (CQGRD) in the College of Architecture, with assistance from the U.S. Centers for Disease Control and Prevention (CDC) and funding from the Robert Wood Johnson Foundation.

The BeltLine project will convert a partly abandoned railroad that circles downtown Atlanta into a transit corridor and multi-use trail connected to an expanded city park system and targeted areas for redevelopment.

“The BeltLine assessment is an opportunity to place health considerations at the forefront of the policy and project decision-making process,” said Catherine L. Rees, Henry W. Professor in the College of Architecture and director of CQGRD.

The BeltLine HIA was scheduled for completion by the end of 2006 and the findings will be disseminated to local officials and the public.

In addition to the HIA, the College of Architecture focused its annual Dean’s Symposium on “The Emerging Nature of Practice” on a discussion of the issues surrounding the BeltLine. Several of Architecture Professor David Green’s urban design studios have looked at specific sections of the BeltLine and the issues that face the neighborhoods in those locations. Professor John Pepoon has studied the elements discussed in Green’s studios and looked at how the scenarios impact the city and region as a whole.

The BeltLine project originated from the thesis of College of Architecture alumnus Ryan Gravel. “My hope for the BeltLine is that it will truly create healthy, sustainable communities where people want to live and that it will accommodate thousands of anticipated new residents in the city of Atlanta and at the same time maintain a high quality of life for existing residents,” said Gravel.

“I hope the BeltLine changes the way we think about Atlanta so that the city can truly transform into a progressive, livable region.”
During the winter and spring breaks, hundreds of Tech students traveled to the Gulf Coast to help clean homes damaged by Katrina. The Occupational Safety and Health Administration (OSHA) also turned to the Georgia Tech Research Institute for help, providing a $400,000 grant to train workers involved in cleanup and rebuilding in Gulf Coast areas. Ten GTRI teams rotated in and out of the disaster areas over a six-month period, providing training in electrical and electrocution hazards, hand and power tool safety, biological hazards, chemical and respiratory hazards, confined space hazards, heat stress, ergonomic considerations, and hazardous materials and waste.

The Search for Answers
In addition to the loss of life and billions of dollars in property damage, the Gulf Coast hurricanes of 2005 posed difficult questions about how the flooding of New Orleans could have occurred. In response, the Department of Defense asked the National Academies to create the Committee on New Orleans Regional Hurricane Protection Projects and requested Georgia Tech President G. Wayne Clough to be its chair. The committee is charged with overseeing studies into why the levee failed and reviewing the designs and plans for improving the flood protection systems around New Orleans.

“It is a role that I was pleased to undertake for several reasons,” said Clough, whose first job after graduating from Georgia Tech was working on flood protection issues for the Mississippi River Basin with the U.S. Army Corps of Engineers. “I know the history of these projects and relate closely to their importance to the people living there.”

Clough said the Corps’ immediate work is to repair the damaged areas, but longer-term improvements must be made to enhance the level of protection the levees can provide. He believes that taking the levee system to the level of a Category 5 hurricane will require an innovative systems approach.

“The National Academies and National Research Council have assembled an outstanding group of experts from a range of fields to bear on our work,” said Clough. “I am certain we have the right group to tackle this very tough assignment.”

Research conducted by Tech’s School of Earth and Atmospheric Sciences (EAS) lends urgency to the work of the Committee. Although the total number of hurricanes has dropped since the 1970s, the number of Category 4 and 5 hurricanes has nearly doubled over the past thirty-five years, according to researchers at EAS and the National Center for Atmospheric Research (NCAR). During the same period, global sea surface temperatures have increased.

EAS Professor Peter Webster, along with NCAR’s Greg Holland and Tech’s Judith Curry and Hai-Ru Chang, studied the number, duration, and intensity of hurricanes worldwide from 1970 to 2004. “What we found was rather astonishing,” said Webster. “In the 1970s, there was an average of about ten Category 4 and 5 hurricanes per year globally. Since 1990, the number of Category 4 and 5 hurricanes has almost doubled, averaging eighteen per year globally.”

Category 4 hurricanes have sustained winds from 131 to 155 miles per hour; Category 5 systems, such as Hurricane Katrina at its peak over the Gulf of Mexico, feature winds of 156 miles per hour and higher. “Category 4 and 5 storms are also making up a larger share of the total number of hurricanes,” said Curry, EAS school chair and co-author of the study. “Category 4 and 5 hurricanes made up about 20 percent of all hurricanes in the 1970s, but over the last decade they account for about 35 percent of these storms.”

Sea surface temperatures have risen anywhere from one-half to one degree Fahrenheit, depending on the location, for hurricane seasons since the 1970s. “Our work is consistent with the concept that there is a relationship between increasing sea surface temperature and hurricane intensity,” said Webster. “However, it’s not a simple relationship. In fact, it’s difficult to explain why the total number of hurricanes and their longevity have decreased during the last decade, when sea surface temperatures have risen the most.”

Webster said that whether the increase in hurricane intensity is due to human-induced global warming is still uncertain. “We need a longer data record of hurricane statistics,” he said, “and we need to understand more about the role hurricanes play in regulating the heat balance and circulation in the atmosphere and oceans.”
In the spring of 2006, Jean-Lou Chameau, Georgia Tech provost and vice president for academic affairs, was named president of the California Institute of Technology, a post he assumed in September.

“Jean-Lou has played an indispensable role in the evolution of Georgia Tech’s stature as one of our nation’s top ten public universities,” said President Wayne Clough. “We are very proud of his appointment and hope to take advantage of this link between two of the nation’s leading technological universities. We consider ourselves fortunate to have enjoyed the benefits of his talents for such an extraordinary length of time.”

Chameau, 53, had served as provost and vice president for Academic Affairs since 2001 and as a Georgia Research Alliance Eminent Scholar since 1995. He joined the Georgia Tech faculty in 1991.

Before becoming provost at Georgia Tech, he served as dean of the College of Engineering. As dean of the largest college of engineering in the country, Chameau led educational and research programs in nine engineering disciplines, all of which have received national recognition and collectively confer the largest number of engineering degrees to undergraduate and graduate students in the country.

In addition to continuing to enhance the strengths of its core disciplines, Chameau was instrumental in making Georgia Tech a worldwide model for interdisciplinary activities, technology innovation, and entrepreneurship, and a catalyst for economic development. During his tenure he also emphasized efforts to improve the educational experience of students, increase diversity on campus, recruit women into engineering and science, and foster entrepreneurship and international opportunities for faculty and students. Chameau received his secondary and undergraduate education in France, and graduate education in civil engineering from Stanford University. In 1980 he joined the civil engineering faculty at Purdue University, where he subsequently became full professor and head of the geotechnical engineering program. In 1991, he was named chair of Georgia Tech’s School of Civil and Environmental Engineering. From 1994 to 1995, he was the president of Golder Associates. He currently serves on the boards of directors for MTS Systems Corp. and Prime Engineering, and is a trustee and treasurer of the Georgia Tech Research Corporation.

Honors Chameau has received include the Rodney D. Chipp Memorial Award from the Society of Women Engineers, a National Science Foundation Presidential Young Investigator Award, and the ASCE Casagrande Award.

In addition to saying goodbye to Chameau, Georgia Tech also bids farewell to his wife, Carol Carmichael, director of Tech’s Institute for Sustainable Technology and Development, where she served as the Georgia Tech advocate for sustainability in research, education, and outreach programs. A graduate of Georgia Tech in technology and science policy, Carmichael was a key member of the research team in the Environmentally Conscious Design and Manufacturing Program in Tech’s Manufacturing Research Center. Georgia Tech expresses profound appreciation to both Chameau and Carmichael for their vast contributions to the Institute and wishes them well in their new endeavors.
The Industrial Design program in the College of Architecture received an M.B.A. in Product Design Management from the Department of Biomedical Engineering at Georgia Tech. The program is designed to prepare students for careers in product design management and to help businesses to create new products. Faculty and students in the program are involved in a variety of areas, including product development, product design, and product management.

For the seventh consecutive year and the eighth time in the last ten years, Georgia Tech Athletics in the National Collegiate Athletic Association (NCAA) recognizes its Top 100 Student-Athletes. The list includes 107 students who have distinguished themselves athletically and in the classroom.

A proposed undergradu- ate concentration in the College of Architecture in the area of environmental systems design is being developed. The concentration will focus on the design and analysis of systems that provide comfort, safety, and security to building occupants. The concentration aims to prepare students for careers in the field of environmental systems design.

The Georgia Institute of Technology is a top-ranked university in the United States and a leading research institution. The university is known for its excellence in engineering, technology, and computer science. The university has a strong emphasis on interdisciplinary research and collaboration among faculty and students.

The Institute of Electrical and Electronics Engineers (IEEE) elects four Georgia Tech professors to its Board of Directors. The four professors are Emory S. Martin, a professor of computer science and electrical engineering; Fun-Yi Wang, a professor of computer science; Prashant Paranjape, a professor of computer science; and Tim Whiteside, a professor of computer science.

The Georgia Board of Regents has approved the appointment of Dan M. Coats as the 11th president of the University of Georgia. Coats served as the president of the University of Iowa from 2008 to 2013 and was previously the provost and vice president for academic affairs at the University of Wisconsin-Madison.

The School of Architecture is one of the top architecture programs in the United States. The school offers undergraduate and graduate programs in architecture, as well as a professional doctorate program. The school is known for its emphasis on critical thinking, research, and design.

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# Enrollment and Degrees

## New Degrees Since 1994

Bachelor's:  
- Biomedical Engineering  
- Computational Media  
- Economics & International Affairs  
- Environmental Engineering  
- Global Economics & Modern Languages  
- International Affairs & Modern Languages  
- Materials Science and Engineering*  
- Polymer and Fiber Engineering*  
- Public Policy

Master's:  
- Bioengineering  
- Biomedical Engineering  
- Building Construction & Facility Management  
- Business Administration*  
- Electrical & Computer Engineering  
- Global Executive MBA  
- Human-Computer Interaction  
- Industrial Design  
- Information Security  
- International Affairs  
- International Logistics  
- Management of Technology  
- Materials Science and Engineering*  
- Medical Physics*  
- Paper Science & Engineering  
- Prosthetics & Orthotics  
- Quantitative & Computational Finance

Doctoral:  
- Algorithms, Combinatorics, & Optimization  
- Applied Physiology  
- Bioengineering  
- Bioinformatics  
- Biomedical Engineering  
- Digital Media  
- Electrical & Computer Engineering  
- History & Sociology of Technology & Science*  
- Human Centered Computing  
- Materials Science & Engineering  
- Paper Science & Engineering  
- Public Policy  

*Updated programs

## Total Headcount Enrollment

<table>
<thead>
<tr>
<th>Level</th>
<th>FY 1994</th>
<th>FY 2006</th>
<th>Percent Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>9,181</td>
<td>11,941</td>
<td>29%</td>
</tr>
<tr>
<td>Graduate</td>
<td>3,644</td>
<td>5,294</td>
<td>45%</td>
</tr>
<tr>
<td>Total</td>
<td>12,825</td>
<td>17,235</td>
<td>33%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FTE Enrollment</th>
<th>FY 1994</th>
<th>FY 2006</th>
<th>Percent Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12,705</td>
<td>16,300</td>
<td>28%</td>
</tr>
</tbody>
</table>

## Comparison of Total Headcount Enrollment FY 1994 and FY 2006

<table>
<thead>
<tr>
<th>Level</th>
<th>FY 1994</th>
<th>FY 2006</th>
<th>Percent Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>18,000</td>
<td>16,000</td>
<td>-10%</td>
</tr>
<tr>
<td>Graduate</td>
<td>12,000</td>
<td>10,000</td>
<td>-20%</td>
</tr>
<tr>
<td>Total</td>
<td>30,000</td>
<td>26,000</td>
<td>-13%</td>
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</table>

## Comparison of Degrees Awarded by Level FY 1994 and FY 2006

<table>
<thead>
<tr>
<th>Level</th>
<th>FY 1994</th>
<th>FY 2006</th>
<th>Percent Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor's</td>
<td>12,000</td>
<td>10,000</td>
<td>-16%</td>
</tr>
<tr>
<td>Master's</td>
<td>1,000</td>
<td>1,000</td>
<td>0%</td>
</tr>
<tr>
<td>Doctoral</td>
<td>1,000</td>
<td>1,000</td>
<td>0%</td>
</tr>
</tbody>
</table>

## Comparison of Headcount Enrollment by Level FY 1994 and FY 2006

<table>
<thead>
<tr>
<th>Level</th>
<th>FY 1994</th>
<th>FY 2006</th>
<th>Percent Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>12,000</td>
<td>10,000</td>
<td>-16%</td>
</tr>
<tr>
<td>Graduate</td>
<td>12,000</td>
<td>10,000</td>
<td>-16%</td>
</tr>
<tr>
<td>Total</td>
<td>24,000</td>
<td>20,000</td>
<td>-17%</td>
</tr>
</tbody>
</table>

## Undergraduate, Graduate, and Total FY 1994 and FY 2006

<table>
<thead>
<tr>
<th>Level</th>
<th>FY 1994</th>
<th>FY 2006</th>
<th>Percent Increase/Decrease</th>
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</table>

## New Degree Programs 1994-2006

- Biomedical Engineering  
- Computational Media  
- Economics & International Affairs  
- Environmental Engineering  
- Global Economics & Modern Languages  
- International Affairs & Modern Languages  
- Materials Science and Engineering*  
- Polymer and Fiber Engineering*  
- Public Policy  
- Bioengineering  
- Bioinformatics  
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- Materials Science & Engineering  
- Paper Science & Engineering  
- Public Policy  
- Updated programs
MESSAGE FROM THE SENIOR VICE PRESIDENT FOR ADMINISTRATION AND FINANCE

This Fiscal Year 2006 annual financial report reflects the continued commitment of the Georgia Institute of Technology administration to provide an annual compilation of the Institute’s financial position and performance, thereby documenting the growth and health of the Institute over time for its many benefactors, constituents, friends, and supporters. It presents the Institute’s general purpose unaudited financial statements and accompanying footnotes for the Fiscal Year 2006 ending June 30, 2006. It should be noted that the Georgia Institute of Technology is one of the thirty-five (35) institutions that comprise the University System of Georgia governed by the Board of Regents. The Institute’s financial statements are audited annually by the State of Georgia Department of Audits in its annual audit of the University System. Their audited financial statements will be available for review at “fin-services@gatech.edu.”

The Fiscal Year 2006 financial report for the Institute incorporates Governmental Accounting Standards Board (GASB) Statements 34, 35, and 39, first required in FY2004, to enhance the understanding of the following three groups of financial statement users:

- Those to whom government is primarily accountable (citizens)
- Those who directly represent citizens (legislative and oversight bodies)
- Those who lend or participate in the lending process (investors and creditors)

Three basic financial statements are presented: Statement of Net Assets (the Balance Sheet); Statement of Revenues, Expenses, and Changes in Net Assets (the Income Statement); and Statement of Cash Flows. It is important to note that GASB treats state appropriations as “non-operating income” rather than “operating income,” a presentation requirement that makes it appear that Georgia Tech and other public colleges and universities have an “operating loss” since state appropriations are not considered as operating income. A full picture of the year’s operations can be seen from the “bottom line” of the Statement of Revenues, Expenses, and Changes in Net Assets. GASB standards also require the discrete reporting of affiliated organizations in the Institute’s audited Financial Statements. For this unaudited annual report, affiliate information is included in the notes.

Note 1 to the financial statements recognizes the significant contributions of six separately incorporated cooperative organizations to the annual operation and performance of the Georgia Institute of Technology. These six cooperative organizations provide the means and support to build facilities and purchase equipment; to receive and invest contributions; to perform sponsored research and services and license intellectual property; to facilitate technology transfer and economic development; to provide programs and facilities for intercollegiate athletics; and to inform and promote alumni interest in the Institute. Together they add significantly to Institute assets and revenues for programs and services, and ultimately enhance the Institute’s performance of its mission.

This annual report demonstrates the commitment and the progress Georgia Tech has made in its quest to become the defining technological university of the twenty-first century. This quest includes a campus-wide effort to build an administrative, support, and capital asset infrastructure equal to that task while emphasizing human values that lie at the core of the educational mission of the Institute.

Fiscal Year 2006 marks the twelfth year of significant Georgia Tech accomplishments under the leadership of President G. Wayne Clough. This annual report highlights some of the end results of the strategic visioning, teamwork, dedication, and focus of the many Georgia Tech faculty, students, staff, and supporters on and off the campus. Efforts to improve the Institute’s capital infrastructure and administrative processes and systems have touched all departments and employees of the campus, and enhanced the achievement of academic goals and plans. The Institute continued to receive good audit reports with no major findings in the many federal and state audits conducted annually. Best practice programs continue to be emphasized in business and finance operations throughout the campus. Special efforts have continued to enhance information security in all business areas and to protect Institute assets from external intrusion. The Institute’s physical development continues to evolve with new construction, infrastructure, renovations, and landscape improvements focused on strategic plans and sustainable development. FY2006 has been another year of major progress toward the Institute’s mission to be the defining technological university of the twenty-first century.

Employees in Administration and Finance and throughout the academic and other major divisions of the Institute made significant contributions to the performance highlighted in this annual report, and I wish here to acknowledge and praise their efforts to move the Institute forward in FY2006. A great university is characterized by disciplined people engaged in disciplined thought leading to disciplined action, an apt description of the Georgia Tech team. A special thanks goes to members of the Administration and Finance Management Team listed on the facing page who played key leadership roles in achieving these accomplishments.

Sincerely,

Robert K. Thompson
Senior Vice President
Administration and Finance
## GEORGIA INSTITUTE OF TECHNOLOGY STATEMENT OF NET ASSETS
(dollars in thousands)

<table>
<thead>
<tr>
<th></th>
<th>Primary Government</th>
<th>Primary Government</th>
<th>Component Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>June 30, 2005 (audited)</td>
<td>June 30, 2006 (unaudited)</td>
<td>June 30, 2006 (see note)</td>
</tr>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Assets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and Cash Equivalents</td>
<td>$57,572</td>
<td>$74,941</td>
<td>$67,711</td>
</tr>
<tr>
<td>Short-term Investments</td>
<td>4,137</td>
<td>163</td>
<td></td>
</tr>
<tr>
<td>Accounts Receivable, net</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receivables—Federal Financial Assistance</td>
<td>9,809</td>
<td>3,065</td>
<td></td>
</tr>
<tr>
<td>Receivables—State General Appropriations Allotment</td>
<td>10,902</td>
<td>18,553</td>
<td>33,336</td>
</tr>
<tr>
<td>Receivables—Other</td>
<td>40,006</td>
<td>41,383</td>
<td>434</td>
</tr>
<tr>
<td>Leases Receivable</td>
<td>5,960</td>
<td></td>
<td>5,960</td>
</tr>
<tr>
<td>Pledges Receivable</td>
<td>3,169</td>
<td></td>
<td>3,169</td>
</tr>
<tr>
<td>Due from Component Units</td>
<td>40,006</td>
<td>41,383</td>
<td>434</td>
</tr>
<tr>
<td>Due from Primary Government Inventories</td>
<td>496</td>
<td>302</td>
<td>2</td>
</tr>
<tr>
<td>Prepaid Items</td>
<td>5,636</td>
<td>3,345</td>
<td>7300</td>
</tr>
<tr>
<td>Notes and Mortgages Receivable</td>
<td>1,319</td>
<td></td>
<td>1,319</td>
</tr>
<tr>
<td>Other Assets</td>
<td>46,715</td>
<td></td>
<td>46,715</td>
</tr>
<tr>
<td><strong>Total Current Assets</strong></td>
<td>128,558</td>
<td>141,652</td>
<td>165,946</td>
</tr>
<tr>
<td><strong>Noncurrent Assets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noncurrent Cash</td>
<td>226</td>
<td>549</td>
<td>77,787</td>
</tr>
<tr>
<td>Due from Component Units</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Due from Primary Government Investments (Including Real Estate)</td>
<td>53,552</td>
<td>54,700</td>
<td>1,303,060</td>
</tr>
<tr>
<td>Notes Receivable, net</td>
<td>7,686</td>
<td>8,190</td>
<td></td>
</tr>
<tr>
<td>Leases Receivable</td>
<td>171,744</td>
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<td></td>
</tr>
<tr>
<td>Pledges Receivable</td>
<td>8,080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Assets</td>
<td>44,110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Assets, net</td>
<td>1,135,753</td>
<td>1,149,607</td>
<td>292,694</td>
</tr>
<tr>
<td><strong>Total Noncurrent Assets</strong></td>
<td>1,192,217</td>
<td>1,213,046</td>
<td>1,897,475</td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td>1,325,775</td>
<td>1,354,698</td>
<td>2,063,421</td>
</tr>
<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>7,056</td>
<td>3,954</td>
<td>15,337</td>
</tr>
<tr>
<td>Salaries Payable</td>
<td>557</td>
<td>661</td>
<td></td>
</tr>
<tr>
<td>Benefits Payable</td>
<td>153</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td>Contracts Payable</td>
<td>855</td>
<td>2,021</td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>17,122</td>
<td>22,518</td>
<td>9,459</td>
</tr>
<tr>
<td>Deferred Revenue</td>
<td>23,094</td>
<td>19,829</td>
<td>35,695</td>
</tr>
<tr>
<td>Other Liabilities</td>
<td>1,791</td>
<td>4,903</td>
<td>10,832</td>
</tr>
<tr>
<td>Deposits Held for Other Organizations</td>
<td>3,170</td>
<td>2,749</td>
<td></td>
</tr>
<tr>
<td>Due to Component Units</td>
<td></td>
<td></td>
<td>434</td>
</tr>
<tr>
<td>Due to Primary Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Portion of Long-term Debt</td>
<td>7,119</td>
<td>10,009</td>
<td>57,636</td>
</tr>
<tr>
<td>Compensated Absences (Current Portion)</td>
<td>15,945</td>
<td>16,016</td>
<td>1,384</td>
</tr>
<tr>
<td><strong>Total Current Liabilities</strong></td>
<td>78,862</td>
<td>82,815</td>
<td>172,166</td>
</tr>
<tr>
<td><strong>Noncurrent Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Due to Component Units</td>
<td></td>
<td></td>
<td>77,802</td>
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<tr>
<td>Due to Primary Government</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Lease Purchase Obligations (Noncurrent)</td>
<td>330,919</td>
<td>326,115</td>
<td>60,105</td>
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<tr>
<td>Deferred Revenue (Noncurrent) and Other Noncurrent Liabilities</td>
<td>10,924</td>
<td>10,924</td>
<td>630,986</td>
</tr>
<tr>
<td>Compensated Absences (Noncurrent)</td>
<td>12,496</td>
<td>11,880</td>
<td></td>
</tr>
<tr>
<td><strong>Total Noncurrent Liabilities</strong></td>
<td>343,415</td>
<td>348,919</td>
<td>768,939</td>
</tr>
<tr>
<td><strong>TOTAL LIABILITIES</strong></td>
<td>420,277</td>
<td>431,734</td>
<td>941,059</td>
</tr>
<tr>
<td><strong>NET ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invested in Capital Assets, net of related debt</td>
<td>797,715</td>
<td>814,640</td>
<td>59,338</td>
</tr>
<tr>
<td>Restricted for</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonexpendable</td>
<td>45,926</td>
<td>47,353</td>
<td>331,656</td>
</tr>
<tr>
<td>Expendable</td>
<td>29,916</td>
<td>26,608</td>
<td>381,211</td>
</tr>
<tr>
<td>Capital Projects</td>
<td>18,850</td>
<td>15,941</td>
<td>14,780</td>
</tr>
<tr>
<td>Unrestricted</td>
<td>13,091</td>
<td>18,240</td>
<td>335,377</td>
</tr>
<tr>
<td><strong>TOTAL NET ASSETS</strong></td>
<td>905,498</td>
<td>922,964</td>
<td>1,122,362</td>
</tr>
</tbody>
</table>
## FINANCIAL REPORT 2006

### GEORGIA INSTITUTE OF Technology STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS

**(dollars in thousands)**

<table>
<thead>
<tr>
<th>Primary Government</th>
<th>Component Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 30, 2005 (audited)</td>
<td>June 30, 2006 (unaudited) (see note)</td>
</tr>
</tbody>
</table>

### REVENUES

#### Operating Revenues

**Student Tuition and Fees (Net of Allowance for Doubtful Accounts)**

- **$116,372**
- **$124,986**

**Less: Scholarship Allowances**

- **18,711**
- **18,855**

**Grants and Contributions**

- **$50,866**

**Endowment Income (Per Spending Plan)**

- **34,362**

**Federal Appropriations**

- **Grants and Contracts**
  - **Federal**
    - **273,374**
  - **State**
    - **14,948**
  - **Other**
    - **98,072**

**Sales and Services**

- **$12,291**
- **$14,319**
- **$27,339**

**Rents and Royalties**

- **$513**
- **$652**
- **$37,590**

**Auxiliary Enterprises**

- **Residence Halls**
  - **31,694**
- **Bookstore**
  - **979**
- **Food Services**
  - **15,075**
- **Parking/Transportation**
  - **9,435**
- **Health Services**
  - **4,761**
- **Intercollegiate Athletics**
  - **1,939**
- **Other Organizations**
  - **1,566**

**Other Operating Revenues**

- **$13,306**

**Total Operating Revenues**

- **$575,614**
- **$624,286**
- **$487,209**

### EXPENSES

#### Operating Expenses

**Salaries**

- **Faculty**
  - **208,715**
- **Staff**
  - **218,241**

**Benefits**

- **79,925**
- **87,986**
- **3,657**

**Other Personal Services**

- **3,175**
- **3,423**
- **97**

**Travel**

- **13,699**
- **15,842**
- **2,683**

**Scholarships and Fellowships**

- **$1,766**
- **10,532**
- **1,020**

**Utilities**

- **20,092**
- **24,974**
- **447**

**Supplies and Other Services**

- **208,671**
- **203,138**
- **25,450**

**Depreciation**

- **51,254**
- **56,026**
- **9,470**

**Other Operating Expense**

- **5,247**

**Payments to or on Behalf of Georgia Institute of Technology**

- **416,137**

**Total Operating Expenses**

- **$815,538**
- **$842,777**
- **$480,989**

### NONOPERATING REVENUES (EXPENSES)

#### State Appropriations**

- **213,544**
- **233,962**

**Grants and Contracts**

- **Federal**
  - **4,236**
- **State**
  - **9,508**
- **Other**
  - **3,637**

**Investment Income (Endowments, Auxiliary, and Other)**

- **12,698**
- **7914**

**Interest Expense (Capital Assets)**

- **9,251**
- **11,914**
- **99,047**

**Other Nonoperating Revenues**

- **(12,175)**
- **(14,015)**

**Net Nonoperating Revenues**

- **219,616**
- **222,812**
- **66,264**

**Capital Grants and Gifts**

- **Federal**
  - **4,236**
- **State**
  - **9,508**
- **Other**
  - **3,637**

**Total Other Revenues**

- **6,598**
- **13,145**
- **22,321**

**Increase in Net Assets**

- **(13,710)**
- **17,466**
- **94,805**

### NET ASSETS

**Net Assets—Beginning of Year, As Originally Reported**

- **919,208**
- **905,498**
- **1,027,557**

**Prior Year Adjustments**

- **919,208**
- **905,498**
- **1,027,557**

**Net Assets—Beginning of Year, Restated**

- **919,208**
- **905,498**
- **1,027,557**

**Net Assets—End of Year**

- **905,498**
- **922,964**
- **1,122,362**
## GEORGIA INSTITUTE OF TECHNOLOGY STATEMENT OF CASH FLOWS
### (dollars in thousands)

<table>
<thead>
<tr>
<th></th>
<th>June 30, 2005 (audited)</th>
<th>June 30, 2006 (unaudited)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CASH FLOWS FROM OPERATING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition and Fees</td>
<td>$94,668</td>
<td>$105,271</td>
</tr>
<tr>
<td>Grants and Contracts (Exchange)</td>
<td>378,378</td>
<td>418,644</td>
</tr>
<tr>
<td>Sales and Services of Educational Departments</td>
<td>12,291</td>
<td>18,348</td>
</tr>
<tr>
<td>Payments to Suppliers</td>
<td>(326,427)</td>
<td>(327,471)</td>
</tr>
<tr>
<td>Payments to Employees</td>
<td>(424,128)</td>
<td>(441,297)</td>
</tr>
<tr>
<td>Payments for Scholarships and Fellowships</td>
<td>(11,766)</td>
<td>(10,532)</td>
</tr>
<tr>
<td>Loans Issued to Students and Employees</td>
<td>(2,279)</td>
<td>(3,815)</td>
</tr>
<tr>
<td>Collection of Loans to Students and Employees</td>
<td>1,860</td>
<td>3,310</td>
</tr>
<tr>
<td><strong>Auxiliary Enterprise Charges:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residence Halls</td>
<td>31,611</td>
<td>36,769</td>
</tr>
<tr>
<td>Bookstore</td>
<td>978</td>
<td>1,080</td>
</tr>
<tr>
<td>Food Services</td>
<td>15,068</td>
<td>13,994</td>
</tr>
<tr>
<td>Parking/Transportation</td>
<td>9,447</td>
<td>10,609</td>
</tr>
<tr>
<td>Health Services</td>
<td>4,763</td>
<td>5,047</td>
</tr>
<tr>
<td>Intercollegiate Athletics</td>
<td>1,939</td>
<td>2,101</td>
</tr>
<tr>
<td>Other Organizations</td>
<td>1,529</td>
<td>1,762</td>
</tr>
<tr>
<td>Other Receipts (Payments)</td>
<td>20,969</td>
<td>10,925</td>
</tr>
<tr>
<td><strong>Net Cash Provided (Used) by Operating Activities</strong></td>
<td>(191,099)</td>
<td>(155,255)</td>
</tr>
</tbody>
</table>

| **CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES** |                         |                           |
| State Appropriations       | 213,544                 | 233,962                   |
| Agency Funds Transactions  | (3,474)                 | (421)                     |
| Other Nonoperating Receipts (Used) | 14,562                 | 1,469                     |
| Gifts and Grants Received for Other Than Capital Purposes | 10,654                 | 5,233                     |
| **Net Cash Flows Provided by Noncapital Financing Activities** | 235,286                | 240,243                   |

| **CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES** |                         |                           |
| Capital Grants and Gifts Received | 4,236                   | 6,269                     |
| Proceeds from Sale of Capital Assets | 61                     | 47                        |
| Purchases of Capital Assets     | (44,529)                | (64,371)                  |
| Principal Paid on Capital Debt and Leases | (5,561)                | (7,119)                   |
| Interest Paid on Capital Debt and Leases | (15,690)              | (16,962)                  |
| **Net Cash Used by Capital and Related Financing Activities** | (61,483)               | (82,136)                  |

| **CASH FLOWS FROM INVESTING ACTIVITIES** |                         |                           |
| Proceeds from Sales and Maturities of Investments | 4,115                   | 3,974                     |
| Interest on Investments          | 9,661                   | 10,766                    |
| Purchase of Investments          | —                       | —                         |
| **Net Cash Provided (Used) by Investing Activities** | 13,776                 | 14,740                    |
| Net Increase/Decrease in Cash    | (3,520)                 | 17,592                    |
| Cash and Cash Equivalents - Beginning of Year | 61,318                 | 57,798                    |
| Cash and Cash Equivalents - End of Year | 57,798                 | 75,390                    |

| **RECONCILIATION OF OPERATING LOSS TO NET CASH PROVIDED (USED) BY OPERATING ACTIVITIES** |                         |                           |
| Operating Income (Loss)           | (239,925)               | (218,492)                 |
| Adjustments to Reconcile Net Income (Loss) to Net Cash Provided (Used) by Operating Activities |                         |                           |
| Depreciation                      | 51,254                  | 56,026                    |
| Change in Assets and Liabilities: |                         |                           |
| Receivables, net                 | (3,269)                 | (2,283)                   |
| Inventories                       | (6)                     | 194                       |
| Other Assets                      | (1,991)                 | 1,787                     |
| Accounts Payable                  | 1,280                   | (2,997)                   |
| Deferred Revenue                  | (2,702)                 | 2,547                     |
| Other Liabilities                 | 1,996                   | 8,508                     |
| Compensated Absences              | 2,264                   | (545)                     |
| **Net Cash Provided (Used) by Operating Activities** | (191,099)              | (155,255)                 |
The financial statements presented in this report are modified statements issued under reporting guidelines established by the Governmental Accounting Standards Board (GASB). The statements focus on the financial condition, results of operations, and cash flows of the Institute as a whole, with resources classified for accounting and reporting purposes into four net asset categories: invested in capital assets, net of related debt; restricted-non expendable; restricted-expendable; and unrestricted. The basis of accounting is full accrual, including capitalization and depreciation of equipment and fixed assets.

The unaudited financial statements are prepared using the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis, revenues are recognized when earned, and expenses are recorded when an obligation has been incurred. All significant intra-Institute transactions have been eliminated. Audited financial statements with accompanying footnote disclosures have not been completed at this time. Copies of the audited financial report will be available upon request.

The financial operations and position of six Institute cooperative organizations are considered component units of the Institute and are included by discrete presentation in the Institute financial statements. Although these organizations operate exclusively to provide the Institute with supplemental resources and support, they are separately incorporated and managed by their own boards. An annual post audit of each organization's financial statements is conducted by independent certified public accountants. These organizations are described below:

**Georgia Tech Foundation Inc.** is incorporated as a not-for-profit corporation under the laws of the state of Georgia to promote in various ways the cause of higher education in the state of Georgia, to raise and receive funds for the support and enhancement of the Georgia Institute of Technology, and to aid the Institute in its development as a leading educational institution.

**Georgia Tech Facilities Inc.** is incorporated as a not-for-profit corporation under the laws of the state of Georgia. The purpose of Facilities Inc. is to construct buildings and other facilities as may be appropriate to meet the needs and goals of the Georgia Institute of Technology. Facilities Inc. serves as a financing and contracting entity for construction projects on the campus of Georgia Tech, but does not manage buildings after completion.

**Georgia Tech Alumni Association Inc.** is a nonprofit organization formed to assist the Georgia Institute of Technology in alumni relations and to promote education. The Association acts as a fund-raising arm of the Georgia Tech Foundation through solicitation of contributions from alumni and friends of the Institute on behalf of the Foundation.

**Georgia Tech Research Corporation (GTRC)** is a Georgia nonprofit organization organized and operated exclusively for scientific, literary, and educational purposes. GTRC serves as the contracting agency for all sponsored research activities at Georgia Tech. Additionally, GTRC assists GeorgiaTech in obtaining quality research space, enters into long-term leases for specialized research equipment and facilities, and conducts other research support programs for Georgia Tech and its affiliated research programs. It also owns all intellectual property created at Georgia Tech and manages patents, copyrights, and licenses. All funds received by GTRC are used to support various Georgia Tech research programs as approved by the Board of Trustees of GTRC.

**Georgia Tech Athletic Association Inc.** is a nonprofit organization created for the express purpose of aiding the educational programs of the Institute by providing physical training, recreation, and intercollegiate athletic facilities; carrying out its athletic programs; and soliciting gifts, donations, and grants for the purpose of supporting and enhancing the Institute's varsity athletic programs.

**Georgia Advanced Technology Ventures Inc. (GATV)** is a Georgia nonprofit organization formed to support the Georgia Institute of Technology’s technology transfer and economic development mission. GATV provides capital and operating support for technology transfer and economic development activities, including the Advanced Technology Development Center (ATDC) incubator facilities and services to ATDC-affiliated companies.

### Georgia Institute of Technology Cooperative Organizations

Summary financial data from the financial statements of each cooperative organization is as follows: Year ended June 30, 2006 (dollars in thousands) (audited)

<table>
<thead>
<tr>
<th>GEORGIA TECH FOUNDATION</th>
<th>GEORGIA TECH FACILITIES</th>
<th>GEORGIA TECH ALUMNI ASSOCIATION</th>
<th>GEORGIA TECH RESEARCH CORPORATION</th>
<th>GEORGIA TECH ATHLETIC ASSOCIATION</th>
<th>GEORGIA ADVANCED TECHNOLOGY VENTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Assets</strong></td>
<td>1,390,577</td>
<td>293,822</td>
<td>1,527</td>
<td>105,317</td>
<td>191,066</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>393,621</td>
<td>290,107</td>
<td>528</td>
<td>69,905</td>
<td>123,936</td>
</tr>
<tr>
<td><strong>Unrestricted Net Assets</strong></td>
<td>352,525</td>
<td>(8,139)</td>
<td>257</td>
<td>35,412</td>
<td>9,707</td>
</tr>
<tr>
<td><strong>Restricted Net Assets</strong></td>
<td>644,431</td>
<td>11,854</td>
<td>512</td>
<td>0</td>
<td>57,423</td>
</tr>
<tr>
<td><strong>Net Assets</strong></td>
<td>996,956</td>
<td>3,715</td>
<td>769</td>
<td>35,412</td>
<td>67,130</td>
</tr>
<tr>
<td><strong>Total Net Assets and Liabilities</strong></td>
<td>1,390,592</td>
<td>293,822</td>
<td>1,527</td>
<td>105,317</td>
<td>191,066</td>
</tr>
<tr>
<td><strong>Revenues</strong></td>
<td>196,389</td>
<td>8,893</td>
<td>6,024</td>
<td>344,075</td>
<td>44,371</td>
</tr>
<tr>
<td><strong>Expenditures</strong></td>
<td>93,038</td>
<td>10,284</td>
<td>6,012</td>
<td>345,438</td>
<td>47,766</td>
</tr>
<tr>
<td><strong>Net Increase (Decrease)</strong></td>
<td>103,351</td>
<td>(1,391)</td>
<td>12</td>
<td>(1,363)</td>
<td>(3,395)</td>
</tr>
<tr>
<td><strong>Net Assets: July 1, 2005</strong></td>
<td>893,605</td>
<td>5,106</td>
<td>757</td>
<td>36,775</td>
<td>70,524</td>
</tr>
<tr>
<td><strong>Net Assets: June 30, 2006</strong></td>
<td>996,956</td>
<td>3,715</td>
<td>769</td>
<td>35,412</td>
<td>67,130</td>
</tr>
</tbody>
</table>
PHYSICAL PLANT ASSETS TWELVE-YEAR COMPARISON BOOK VALUE OF LAND, BUILDINGS, AND IMPROVEMENTS
(dollars in millions)

<table>
<thead>
<tr>
<th>FY 1994</th>
<th>FY 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Book Value</td>
<td>$325</td>
</tr>
<tr>
<td>Depreciation Scholarships and Fellowships</td>
<td>$210</td>
</tr>
<tr>
<td>Equipment Depreciation and Small Value Assets</td>
<td>$902</td>
</tr>
<tr>
<td>Book Value of Land, Buildings, and Improvements</td>
<td>$204</td>
</tr>
</tbody>
</table>

In the bar charts to the left, dark portions for FY 2006 reflect current values under national accounting standards requiring depreciation on all assets and the recent Board of Regents rules increasing the equipment capitalization threshold to $5,000. Light extensions show what would have been reported absent the rule changes.