**Introduction**

Historically Georgia Tech has had a rather narrow focus on engineering, science, and technology, but as the Institute moves into the twenty-first century, dissolving boundaries and new opportunities are increasing its breadth.

Tech has stepped across the disciplinary boundaries that separate biology, chemistry, medicine, engineering, and computing to launch a broad array of healthcare initiatives, from nanomedicine to bioinformatics, from cancer diagnosis and treatment to prosthetic devices for those who have lost limbs.

The Institute is also a leader at the intersection of computing with the liberal arts, gaining national and international attention for using videogames to explore real-life problems and approaching music composition from a creative technological perspective.

As a global economy based on innovation takes shape, Georgia Tech has crossed national boundaries, developing strategic education and research platforms in Europe and Asia, and helping the state of Georgia expand its global economic connections.

As Tech reaches across traditional boundaries and uses technology in creative ways to solve problems and improve the quality of life, the Institute is becoming increasingly well-rounded, interdisciplinary, collaborative, and global.

Taken together, the achievements of the 2006-07 year illustrate Tech’s emerging paradigm of the technological research university of the twenty-first century.

**Students Shine**

- Biomedical engineering students Inn Inn Chen and Yixao Zou won Goldwater Scholarships. Chen was also named to USA Today’s all-USA College Academic Team.

- Nabil Wilf, 2006 graduate named Fulbright Fellow to Kuwait, won a Gates Cambridge Scholarship to pursue a PhD in biochemistry.

- Drew Hess was Georgia Tech’s first management student to win a Kauffman PhD Dissertation Fellowship.

- Georgia Tech’s Interfraternity Council won eight awards—more than twice as many as any other of the seventy universities at the Southeastern Interfraternity Conference.

- The Georgia Tech Chapter of the National Society of Black Engineers won the National Large Chapter of the Year Award.

- Finding Common Ground, a student-led initiative, encouraged small group student discussions around controversial issues to promote greater appreciation and respect for diversity and featured a visit by poet Maya Angelou.
Faculty Excel

- Aerospace Engineering Chair Robert Loewy won the Daniel Guggenheim Medal, awarded jointly by the American Institute of Aeronautics and Astronautics (AIAA) and the American Society of Mechanical Engineering (ASME).

- Russell DuPuis won the 2007 Edison Medal, top honor of the Institute of Electrical and Electronics Engineers (IEEE).

- Computing Professor Mary Jean Harrold was designated the No. 1 software engineering scholar in the world by Communications of the ACM, the official magazine of the Association of Computing Machinery.

- Julius Brown Chair and Regents’ Professor of Chemistry and Biochemistry Mostafa El-Sayed received the 2007 Distinguished Professor Award, Georgia Tech’s highest faculty honor.

- Electrical and Computer Engineering Chair Gary May won the 2006 Mentor Award from the American Association for the Advancement of Science for extraordinary leadership in increasing underrepresented groups in science and engineering.

- Associate Computing Professor Eric Vigoda won the Delbert Ray Fulkerson Prize, awarded once every three years by the Mathematical Programming Society and the American Mathematical Society for breakthrough discoveries in discrete mathematics.

- Elected Fellows of the American Association for the Advancement of Science:
  - Evans Harrell II, Sciences
  - Boris Mizaikoff, Chemistry and Biochemistry
  - Nancy Nersessian, Computing
  - Z. L. Wang, Materials Science and Engineering

- National Science Foundation CAREER Awards to young faculty:
  - Kim Cobb, Earth and Atmospheric Sciences
  - Nicholas Feamster, Computing
  - Facundo Fernandez, Chemistry and Biochemistry
  - Charles Isbell, Computing
  - Subhash Khot, Computing
  - Seong-Hee Kim, Industrial and Systems Engineering
  - Hsien-Hsin Lee, Electrical and Computer Engineering
  - Gabriel Loh, Computing
  - Bruce Walker, Psychology
  - Hao-Min Zhou, Mathematics

- Biochemistry Postdoctoral Fellow Bahareh Azizi was one of four young scientists to co-host the PBS television show “Science Investigators.”

- Robert K. Thompson, executive vice president for Administration and Finance, won the 2007 Distinguished Business Officer Award from the National Association of College and University Business Officers.

- Gordon Moore, director of the Office of Minority Education Development, won the Minority Engineering Program Director Award from the National Society of Black Engineers.
Georgia Tech and IBM developed the world’s fastest silicon chip with frequencies above 500 gigahertz.

Tech researchers have shrunk the sensing power of sophisticated biosensors onto a single microchip.

The National Institutes of Health awarded Georgia Tech its third nanomedicine research center, this one focused on DNA and RNA repair. Emory University and the Medical College of Georgia are partners.

Tech researchers developed individualized 3-D modeling and simulation techniques that enable pediatric cardiac surgeons to design and test customized heart-surgery procedures in advance of the actual surgery.

Scientists at Georgia Tech and Emory University developed a quick test for biomarkers such as viruses. The biomarker bonds immediately to magnetic nanobeads added to a fluid sample, making it easy to determine its presence and concentration.

Tech researchers developed a unique combination of imaging technologies that provide three-dimensional, high-resolution images of cartilage, showing promise for diagnosing and monitoring osteoarthritis.

Georgia Tech is a partner with Oak Ridge National Laboratory in a $125 million bioenergy research center funded by the U.S. Department of Energy.

A $12 million research partnership between Tech and Chevron will pursue cellulosic biofuels and hydrogen fuels for transportation.

Tech researchers built and successfully flew an unmanned aircraft with a twenty-two-foot wingspan that is powered by hydrogen.

An engine developed by Tech aerospace engineers optimizes power to use less fuel for launching satellites, enabling either larger payloads or smaller engines.

Sony, Toshiba, and IBM are partners with the College of Computing in the first Center of Competence focused on the multi-core Cell Broadband Engine (Cell BE) microprocessor.

A partnership of the Georgia Tech Information Security Center, AT&T, and Internet Security Systems will study security and reliability for Voice over Internet Protocol (VoIP).

Georgia Tech is one of seven research universities in IBM’s Open Collaborative Research program, which will develop open source software code and publish related intellectual property openly and royalty free.

Tech researchers developed a new sensor, inspired by the design of fish ears, that detects quiet underwater targets and provides directional information.

The College of Architecture helped Emory University design a world-class neuron intensive care unit with natural light, which studies show reduces pain and drug usage, centralization of critical medical services, and space for families.
Athletes Compete

- The women’s tennis team won the 2007 NCAA National Championship and was congratulated by President Bush at the White House. The team also won the national indoor championship. Coach Bryan Shelton was named National Coach of the Year.

- The Yellow Jackets made their tenth consecutive bowl appearance in the Gator Bowl and almost upset No. 12 ranked West Virginia.

- Georgia Tech made its fifteenth appearance in the NCAA Basketball Tournament.

- The softball team set ACC single-season records in team batting average, home runs, RBIs, total bases, slugging percentage, and runs scored.

- The volleyball team concluded its season by winning the ACC/SEC Challenge, which featured the top teams in each league.

- The rowing team won a gold and two silver medals at the Dad Vail Regatta, collegiate rowing’s largest event.

- Yellow Jacket athletes achieved a first for the Institute, which joined only five other universities in the past twenty-five years to have top-twenty picks in the same year’s baseball, football, and basketball drafts. Wide receiver Calvin Johnson was picked second overall in the NFL draft. Catcher Matt Wieters was the fifth overall baseball pick. Thaddeus Young went twelfth and Javaris Crittenton nineteenth in the NBA draft.

Arts Blossom

- Living Game Worlds III, Georgia Tech’s annual electronic gaming symposium, drew hundreds for in-depth discussions about how games can help players learn about real-world issues.

- “Fanya Kaplan,” a historical film about a woman who tried to assassinate Lenin written and produced in Russian by Tech students, won the International Grand Finale of the Campus MovieFest.

- The Georgia Tech Band traveled to Australia to participate in the Australia Cultural Exchange Concert Tour.

- The Georgia Tech Glee Club served as ensemble-in-residence for the Hawaii International Conference of Arts and Humanities, presenting concerts and workshops.
Making the News


- A greater percentage of Tech’s news coverage was positive than any other of its peer universities around the nation.

- During 2006-07 Georgia Tech doubled the percentage of its national print/web news coverage that delivered key strategic messages, which include:
  - Pioneering research that drives innovation
  - Interdisciplinary and collaborative approaches
  - Creating positive economic environments

Primary topics of media interest:
- Climate change/global warming
- Video gaming/YouTube
- Alternative fuels research

Facilities Flourish

- Opened:
  - Christopher W. Klaus Advanced Computing Building
  - Molecular Science and Engineering Building
  - Library East Commons, offering space for group projects and study groups as well as comfy chairs and the Jazzman’s Cafe
  - Ferris-Goldsmith Trading Floor, a 2,000-square-foot high-tech model trading floor to prepare students for careers in investment banking and financial services
  - Fifth Street Bridge, a park-like link over the expressway to Technology Square

- Under construction:
  - Marcus Nanotechnology Building, the largest clean-room facility in the Southeast and the first in the nation designed for biomedical research
  - Old Civil Engineering Building renovation

- Georgia Tech acquired the Olympic housing complex on the south side of North Avenue, enabling more than half of the student body to be housed on campus.
Rankings and Recognitions

- **U.S. News & World Report** ranked Georgia Tech No. 7 among the nation’s public universities, the highest ever. Tech has been among the nation’s top ten public universities for nine consecutive years.
  - Both graduate and undergraduate engineering programs were ranked among the nation’s top five.
  - The College of Management’s MBA program moved into the top ten among public universities.
  - Undergraduate research and internship opportunities were highlighted.

- Georgia Tech was named the nation’s No. 1 producer of African American engineers by *Diverse: Issues in Higher Education*.

- *Hispanic Business* magazine ranked Tech among the top engineering schools for Hispanic graduate students.

- *BusinessWeek* ranked the College of Management’s undergraduate programs second in the nation for return on investment and included the College of Architecture on its list of the world’s top sixty design schools.

- The College of Computing was ranked among the nation’s top five graduate programs in computing by *Communications of the ACM*, the official magazine of the Association of Computing Machinery.

- Georgia Tech ranked No. 3 in the nation in the number of nanotechnology researchers who are “highly cited” in peer-reviewed publications, according to a study by the Southern Growth Policies Board.

- The Global Gaming League included Georgia Tech among the Top Ten Gaming Colleges in the United States based on superior programs, opportunities, and technologies for videogaming.

- *The Scientist* magazine named Georgia Tech among the top fifteen places to work in academia in the United States.


- Georgia Tech won the Paul Simon Internationalization Award for its growing international focus and opportunities for students.

- The College of Management was selected to provide leadership training for scientists, engineers, and technologists who will play key roles in NASA’s new Vision for Space Exploration programs.

- Georgia Tech was inducted into the Cooperative Education Hall of Honor. Tech has the nation’s fourth oldest and largest voluntary program.

- A Milken Institute study identified Georgia Tech as one of the world’s top universities in commercializing biotechnology discoveries and technologies.
Tech Reaches Out

- Georgia Tech Promise, a new need-based scholarship program, helps Georgia students with family income of less than $30,000 to graduate debt-free.

- President G. Wayne Clough was asked by the White House to serve as the United States’ senior representative at the Business and University Leaders Symposium on Innovation, held in Moscow in conjunction with the G-8 Summit. The symposium communiqué was endorsed at the G-8 Summit.

- President Clough was appointed to the National Governors Association’s Innovation America Task Force, charged with helping governors promote innovation.

- The Center for Assistive Technology and Environmental Access created ATWiki—an online encyclopedia of assistive technology for persons with disabilities.

- Georgia Tech was named to the first President’s Higher Education Community Service Honor Roll for its volunteer efforts on the Gulf Coast following Hurricane Katrina.

- About 400 Tech students spent Easter weekend building a playground in New Orleans in the latest working trip to the Gulf Coast organized by Tech’s Campus Christian Fellowship.

- French Minister of Foreign Trade Christine Lagarde visited Georgia Tech to discuss collaborative economic development projects between Georgia Tech and Lorraine, and between Georgia and France.

- E-Liberia: Vision 2010, a new national information and communication technologies policy developed with the assistance of Georgia Tech faculty and graduate students, was unveiled by Liberia President Ellen Johnson-Sirleaf, who visited Georgia Tech in September 2006.

- Ireland President Mary McAleese visited the Tech campus in April. Georgia Tech Ireland opened last June.

- Students and faculty participate in Global Safe Water, a partnership between Georgia Tech and Emory University that works on projects such as water supply in Angola and sanitation in Bolivia.

- Companies in incubation at Tech’s Advanced Technology Development Center accounted for ten of the state’s top twenty-five venture capital deals, including the two largest.

Conclusion

As Georgia Tech reaches across boundaries in creative ways, the Institute is increasingly recognized nationally and internationally for its innovative spirit and its outstanding programs and people. Through hard work, strategic investments, carefully calculated risks, and a focus on innovation and excellence, Georgia Tech is defining the technological university of the twenty-first century—a nimble, global, interdisciplinary, collaborative institution focused on making the world a better place.