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Georgia Tech marks a new millennium

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It was a year that began with the world's largest non-event and ended with one of the most controversial presidential elections in history. Over the course of the year 2000, the nation obsessed over Elian Gonzalez; watched the dotcom industry slide to its knees; applauded nervously a major breakthrough in the Human Genome Project; and wondered whom to cheer for in the battle between the federal government and Bill Gates. Meanwhile, the students, faculty and staff of Georgia Tech registered another notable year in the Institute's history.

A dynamic group of undergraduates

The heart of Georgia Tech — its students — has never been stronger. Demand is up. Quality is up and enrollments are up. New students bring ever-more impressive credentials to campus and 2000 was no exception. The average SAT score of this year's freshman class was 1330, the highest in the history of the Institute, and represents a 55-point increase over the last six years. This year's class boasted 124 National Merit Scholars (up from 108 in '94) and 12 students who earned a perfect 1600 SAT score, a fourfold increase over 1994. Increased quality did not come by limiting numbers, however. Enrollment for fall 2000 was an all-time high of 14,800, putting Tech in line with enrollment targets established by the University System of Georgia.

Student demand is not limited to Atlanta alone, thanks to the new Georgia Tech Regional Engineering Program (GTREP). One year into its existence, GTREP already has nearly 200 students on track to earn Tech engineering degrees without leaving southeast Georgia. A recent $10 million donation of land in Savannah will allow Tech to work with the Savannah Economic Development Authority and others in the region to develop a first-class campus in southeast Georgia.

On the playing fields Tech student athletes excelled. This past year, Mark Taxiera (baseball) and Bryce Molder (golf) were named players of the year in their respective sports. Four outstanding athletes — Carolyn Clavenger (volleyball), Dan Dyke (football), Molder and Taxiera, were named Academic All-Americans. Overall, 38 percent of Georgia Tech's student athletes made the dean's list in the spring semester.

An accomplished faculty

The faculty kept pace with their talented students and achieved acclaim as well. Last year, 10 young faculty earned CAREER Awards from the National Science Foundation, and Tech now boasts a total of 46 CAREER awards, the third highest total of any university in the nation. Two more Tech professors — C.P. Wong in Materials Science and Engineering, and Dick Lipton in Computing — were elected to the National Academy of Engineering, a sign of pre-eminent accomplishment in their fields.

Research continues to thrive at Tech even as the federal government tightens research funding. Tech's research expenditures reached an all-time high of $274 million, marking the sixth consecutive year of growth.

But Tech research attracted more than just money. A host of projects were featured in news media from around the world and a number achieved considerable national attention.

- John Leonard's traffic forecasting research, which offered hope and information to frustrated commuters nation-wide, was featured by the Wall Street Journal, Discover Magazine, the Financial Times of London, and Popular Mechanics.
- A nanotechnology research project under the direction of physics Professor Uzi Landman was featured on the cover of Science magazine.
- Research on body types conducted by the College of Architecture and GTRI had more than 35 placements and ran on TV stations from Chicago to Washington, and Austin to Buffalo.
- Thad Starner's compelling research on wearable computers received widespread attention from CNN, ComputerWorld, and the Atlanta Journal and Constitution.

In all, it was a very respectable year for research publicity.

External validation

College rankings bring out the schizophrenia in almost all universities. Rank highly and/or move up in them, and universities rush to embrace them. Rank low and/or drop down and officials and public relations flacks turn a blind eye or attack the criteria. Fortunately for Georgia Tech in recent years, we've been able to embrace our rankings almost universally. This year was no exception. The engineering graduate program ranked third in the latest U.S. News and World Report survey, and almost every program within the College of Engineering maintained its lofty ranking or moved up. At the undergraduate level, U.S. News ranked Georgia Tech eighth among all public universities, up from 10th in 1999. The DuPree College of Management moved into the top tier of Business Week's annual ranking of business schools this year.

Growing pains

Next to parking, there is perhaps no issue of greater concern at Tech than space — space for classrooms; space for research; space for offices; space for labs. But a combination of the Campus Master Plan, faculty and staff ingenuity, and extremely strong support from alumni and friends proved a powerful ally in the effort to meet critical space needs. The momentum from the Olympic construction program has abated little as the skyline and footprint of the campus continue to evolve.

No announcement was more dramatic than the one to expand the Tech campus across the Fifth Street bridge into Midtown. This ambitious $150 million project will connect Tech to its long-separated Midtown neighbors and create signature space for the DuPree College of Management, Distance Learning and Continuing Education, Yamacraw, ATDC, the Center for Quality Growth and Regional Development, and a variety of other interdisciplinary centers.

This complex, in addition to the completion of IB^2, the planning for the BEM complex, progress in the North Avenue Research Area, and the dedication of the Advanced Wood Products Lab in the College of Architecture portend great things for the future of the Institute.

A historic campaign; a charge to the community

Of course, much of what has been accomplished this past year would not have been possible without the generous support provided by individuals, corporations, and foundations. In 1995, the Campaign for Georgia Tech began quietly with a goal of $300 million. Five years later, the question is not whether the Institute will meet that goal, but by how much we will exceed the latest target of $600 million.

Despite these impressive gains, considerable work remains to be done. In his 2000 State of the Institute address, President Wayne Clough, building upon successful initiatives from a number of colleges, unveiled an incentive plan to improve the undergraduate teaching and learning environment at Tech. He spoke about the need to redouble efforts to recruit, retain and graduate a more diverse student body and a more diverse Tech workforce. He challenged faculty, staff and students to continue to find newer, better and faster ways to bring fundamental research to the marketplace. And he outlined the necessity for a more strategic and effective communications and marketing strategy in order to highlight the relevance and importance of Georgia Tech to its key audiences.

As Georgia Tech moves from the threshold of a new era to become the institution that defines the technological university of the 21st century, 2001 presents innumerable challenges and opportunities. While it may be true that the best way to predict the future is to invent it, it is equally noteworthy that progress cannot occur without a solid foundation and a thorough understanding of past achievements.

The Whistle recounts 2000

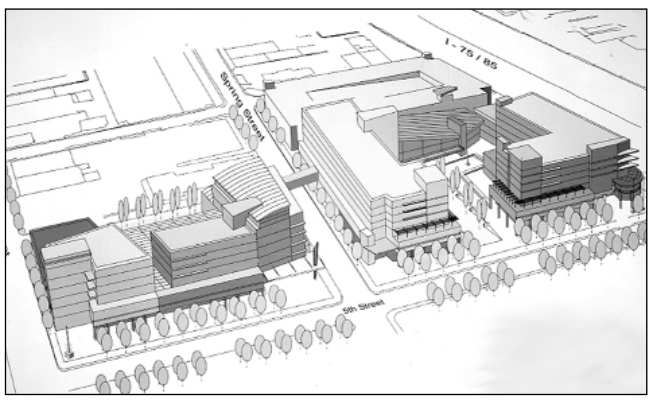
True to the spirit of contemporary publishing, this week's "Year in Review" issue of The Whistle takes a look back at some of the notable events that marked an extraordinary year. Highlighting the best the campus had to offer in the past 12 months, it attempts to scratch the surface of the many remarkable achievements and initiatives to come out of the Tech community. In that spirit, pages two and three look at some of the ways the Tech community has readied itself for the challenges that lie ahead.

Preparing for the 21st century:
growth and change

After more than 17 years of service to the Institute, **Miriam A. Drake**, dean and director of Georgia Tech's Library and Information Center, announced that she would retire. In addition to handling the operation and management of library and information services, Drake was Tech's archivist and records manager.

For the first time in the school's history, **freshman retention** hit 90 percent, an increase of 4 percent over the previous year.

Tech announced a $148 million plan to extend the campus to the east side of the I-75/85 connector along Fifth Street to West Peachtree. The so-called **Fifth Street Project** will occupy eight acres and accommodate not only academic/continuing education space, but also commercial and retail space.



An artist's rendering of the proposed Fifth Street Project, which promises to be a key element to integrating Tech's academic community with its commercial and corporate neighbors. To date, more than $15 million has been raised for the initiative.

Glen Cass, a recognized scientist from the California Institute of Technology, became the new chair of the School of Earth and Atmospheric Sciences. Cass conducts research on regional air pollution and aerosol mechanics.

The **Georgia Tech Regional Engineering Program** experienced unexpected growth in its short history, and announced plans for a permanent facility in Savannah's Technology Campus at Crossroads.

After 35 years, **Frank Roper** retired as the Institute's registrar. It is estimated that he signed more than 79,000 diplomas. Jo McIver, who has been with the Registrar's Office for 19 years, replaced Roper as Tech's first female registrar.

Dick Lipton was named to the Storey Chair in Computing, following a 20-year tenure at Princeton University. His work in computer science theory, cryptography and DNA computing is highly respected throughout the scientific community.

Longtime Georgia Tech head basketball coach **Bobby Cremins** announced his retirement from college coaching in February, signaling an end to the most successful era in Georgia Tech basketball.

Tech partners with Rockdale County Public Schools to form a **science and technology magnet school**, which opened in the fall with curriculum shaped by Tech faculty, exposing high school students to technology knowledge normally reserved for college courses.

Officials in the College of Architecture announced in the fall that **Ellen Dunham-Jones** of the Massachusetts Institute of Technology will become the new director of the Architecture Program and an associate professor. She is a strong proponent of New Urbanism, an architectural movement based on the belief that a return to traditional neighborhood patterns is essential to restoring functional, sustainable communities.

Two new professional MS degree programs were approved during the past year: Bioinformatics, combining biology, mathematics, chemistry, and computing; and Quantitative Computational Finance, an amalgam of mathematics, management, and industrial and systems engineering.

Leon McGinnis, a professor in the School of Industrial and Systems Engineering and associate director of the Manufacturing Research Center, was named the College of Engineering's Gwaltney Chair in Manufacturing Systems.

Nick Voigt became the new director of the iXL Center for E-commerce, teaching courses and providing some real-world perspective for his students from his experience at Hewlett-Packard.

Patrick McCarthy joined the Institute as chair of the School of Economics within Ivan Allen College. His research focuses on the economic impact and public policy of transportation issues.

David Frost was named director of the Georgia Tech Regional Engineering Program, having been acting director since the program's inception in 1998.

This year's incoming class of **President's Scholars** was the first majority-female group in Tech's history. The average President's Scholar for 2000 had an SAT score of 1456 and a GPA of 3.95.

Michael Thomas announced plans to step down as provost to become executive director of Tech's Center for Internet Research, Policy, and Application.

Paul Hewitt, who guided Siena College to an average of 22 wins and two post-season appearances in three seasons as head coach, was named head coach of Tech's men's basketball program in April. Hewitt holds a bachelor of arts degree in journalism and economics from St. John Fisher College in Rochester, N.Y.

The College of Architecture dedicated the **Advanced Wood Products Laboratory**, where new technology and procedures will be tested to help state firms increase their productivity and competitiveness in the Southeast's multibillion-dollar wood products industry.

Richard W. Meyer, a leader in promoting alliances among libraries and other academic institutions, was chosen as the new dean and director of the Tech Library. His focus will be on how the Library can play a greater role in enhancing the undergraduate learning experience, especially by partnering with information technologists.

The $27 million, 135,000-square-foot **J. Erskine Love Manufacturing Building**, the new home for the School of Materials Science and Engineering as well as additional mechanical engineering facilities, was dedicated.

Robert Kolker became chair of the School of Literature, Communication and Culture within Ivan Allen College. He is a member of the Film Steering Committee of the National Gallery of Art in Washington, D.C.

Bruce Ellingwood was tapped for chair of the School of Civil and Environmental Engineering, having previously served as chair of the Department of Civil Engineering at Johns Hopkins University.

Photo by Stanley Leary

Programs such as the freshman Learning Communities have been cited as one possible reason why retention rates have jumped in the last year.

Georgia Tech

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Preparing for the 21st century:

research and innovation

Amy Pritchett's research in **enhancing cockpit displays seeks to give airline pilots more information and greater awareness**. Her system, known as Cockpit Display of Traffic Information (CDTI), aims to update outdated air traffic management in commercial aviation.

Researchers associated with the most comprehensive human body measurement survey ever taken sought volunteers from Georgia Tech for the **Civilian American and European Surface Anthropometry Resource** study, or CAESAR. The international study of body dimensions used digital scanning techniques to create a 3-D computer simulation of each participant. The last major study to collect data was conducted in 1962. The design of products for the 21st century will be based on the CAESAR data.

Rig Hernandez and David Sherrill received a grant from IBM to establish the **Center for Computational Molecular Science and Technology**. The grant allowed them to purchase an SP2 supercomputer.

Robert Dickinson, a new senior faculty member in the School of Earth and Atmospheric Sciences, received a major grant from NASA that is directed at improving the representation of the land surface with global climate models.

Photo by Gary Meek

The potential realization of ubiquitous computing environments spurred much of the outside interest in the College of Computing's Aware Home Research Initiative. The systems being researched here could aid in the development of techniques for audio-based interactions, or health-care and personal monitoring applications, among others.

Tech's **Broadband Institute Residential Laboratory** opened, designed to enhance communications between human and machine as well as between machine and machine. One project, The Aware Home, seeks to simulate a ubiquitous computing environment designed to enhance quality of life.

Using acoustic waves and radar, **Waymond Scott of the School of Electrical and Computer Engineering** is developing methods for a more accurate detection system for buried land mines.

A licensing agreement between the Georgia Tech Research Corporation and SensaTex, Inc., indicates **Sundaresan Jayaraman's "Smart Shirt" is moving rapidly toward commercial manufacture and marketing**.

According to a study released by the Office of Institutional Research and Planning, **data indicate that students who take at least one music course here are more likely to remain in college than those who do not study music**. It shows that having taken a music course resulted in a 4.5-times increase in odds for retention.

The Center for Nanoscience and Nanotechnology is formed, designed to be a collaborative effort within the Tech community that hopes to pull this multidisciplinary research and its 50 faculty members together.

awards and recognition

Research News and Publications received several merit awards for its work from the Council for the Advancement and Support of Education as well as an award of excellence for its research media relations program.

The Woodruff School of Mechanical Engineering was recognized as an American Society of Mechanical Engineers Historical Site, marking the first time ASME has honored an academic institution.

A national survey released by the Southern Technology Council, the technology-policy division of the Southern Growth Policies Board, **ranked Georgia Tech No. 1 in the field of economic development and university/industry technology transfer**. Much of the credit for the high ranking went to Georgia Tech's Advanced Technology Development Center (ATDC), which incubates early-stage technology companies and links them to funding sources and helps entrepreneurs sharpen their focus.

U.S. News and World Report awarded Tech its **highest undergraduate rankings ever**, moving from 10th to eighth among public universities. Further, the magazine ranked Tech's engineering college as fourth in the country, putting seven of its 11 programs in the top 10. The College of Architecture and the College of Computing both finished in the top 15.

Uzi Landman was awarded the Feynman Prize in Nanotechnology, the highest honor given in theoretical nanotechnology.

Receiving **NSF CAREER Awards** this past year were Rob Dickson, School of Chemistry and Biochemistry; Imme Ebert-Uphoffm, School of Mechanical Engineering; Emmanouil Tentzeris, School of Electrical and Computer Engineering; and Andrew Lyon, School of Chemistry and Biochemistry.

Krishan Ahuja, a Regents' researcher in GTRI, was named Engineer of the Year by the American Institute of Aeronautics and Astronautics.

Track coach **Chris Huffins won the bronze medal** in the decathlon at the 2000 Olympic Summer Games in Australia.

A **Tech team won the gold medal at the Nortel Networks University Case Competition**, in which a team of students comprised of multiple disciplinary backgrounds presented business proposals for a network service provider start-up.

School of Chemistry and Biochemistry Assistant Professor **Andrew Lyon was awarded the Beckman Young Investigator Award.**

Karen Feigh, a fourth-year student in aerospace engineering, became the first Tech student in 20 years to be awarded a British Marshall Scholarship, one of 40 students nation-wide to be honored. She is the Institute's fourth Marshall Scholar.

Gifts and giving

The five-year Capital Campaign ended, having surpassed its projected goal of $600 million in alumni, corporate and individual donations. The Institute also boasts 53 new endowed chairs.

A $16 million Leadership-Development Award from the Whitaker Foundation allowed the Georgia Tech/Emory Department of Biomedical Engineering to double in staff size as well as help construct the new BEM Complex.

A gift of $15 million for the construction of the Advanced Computing Technology Building made by 26-year-old Christopher Klaus is one of the largest in the Institute's history.

Selma and Patrick Nettles pledged $10 million for the Molecular and Materials Science Building at Tech, one of four buildings — along with Bioengineering and Bioscience, Environmental Science and Technology; and Biomedical Engineering — that is part of the planned interdisciplinary BEM Complex.

Loralee and Al West donated $8 million for the Undergraduate Learning Center, expanding on their $2 million commitment for technology-enhanced learning initiatives. The Center will be located between the Library and the Student Center, and act as a hybrid of those two traditional facilities.

The Center for Rehabilitation Technology (CRT) received $7.5 million in federal grant money to assist in the development of universal access to information technologies. The funds, provided by the federal Department of Education's National Institute on Disability and Rehabilitation Research, make CRT one of the agency's top-funded organizations.

Tech's Class of 1950, Class of 1960 and Class of 1975 raised a combined $14 million, nearly $1 million of which will go to fund campus beautification projects such as Tower Walk and Yellow Jacket Park.

Hewlett-Packard gave the School of Electrical and Computer Engineering a $1.7 million grant in equipment.

Donations to the annual Charitable Campaign exceeded its goal by 6 percent, topping the $300,000 mark for the first time and beating the previous year's total by more than $42,000.