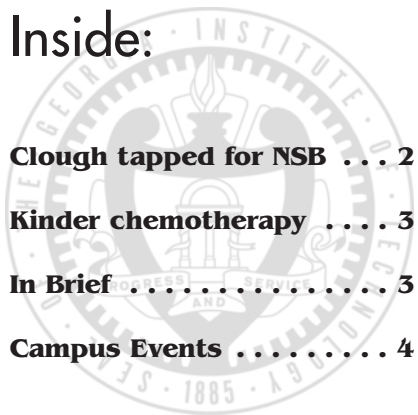


Inside:

Clough tapped for NSB . . . 2
 Kinder chemotherapy . . . 3
 In Brief . . . 3
 Campus Events . . . 4



THE WHISTLE

FACULTY/STAFF NEWSPAPER

Volume 29, Number 32 • October 4, 2004

THE GEORGIA INSTITUTE OF TECHNOLOGY

Tech seeks to maintain excellence in the face of dwindling state resources

*Sarah Eby-Ebersole
 Institute Communications
 and Public Affairs*

During the past decade, Georgia Tech has gained recognition as one of the nation's top ten public universities. Demand from in-state and out-of-state students has never been higher, and the Institute has never been more successful in attracting research funding and donor gifts to help support its quest for excellence and to leverage state dollars. Yet recent trends in state support are putting this dramatic progress at risk. A clearer focus on the issues of funding public education in Georgia is warranted, before irreparable harm is done to Georgia Tech and the University System of Georgia, which are key resources for the state's well-being.

Demand and enrollment are growing...

The economic power of a college education is on the rise. Jobs requiring college degrees have been growing faster than the overall job growth, and college graduates earn more than high school graduates — \$1 million more over the course of their careers. The gap is even wider for a technological education. Recent Georgia Tech graduates earn higher wages than graduates of any other institution in the University System of Georgia, and Georgia's average high-tech job pays 79 percent more than the state's average private-sector wage. To address the growing demand from industries for technologically educated workers and the growing demand from students for a technological education, Georgia Tech has increased its enrollment by 4,000 students over the past ten years (see chart, page 2).

...but state funding is declining

During the first six years of this ten-year time frame, state funds allocated to Tech increased moderately in response to the growth in its enrollment. However, beginning in fiscal year 2001, state funding slowed and Georgia Tech experienced a series of cuts. Over the past four fiscal years,

This latest reduction will be borne disproportionately by the University System of Georgia. Appropriations for the University System comprise 10 percent of the state budget, but the System must bear 38.6 percent of the cut.

Georgia Tech has sustained \$43 million in cuts from its state funding — a 23 percent reduction. During this same period, Tech's enrollment rose by 1,250 students.

In August 2004, Governor Sonny Perdue announced yet another cut — this time in the state budget for the 2005 fiscal year, which began in July. This latest reduction will be borne disproportionately by the University System of Georgia. Appropriations for the University System comprise 10 percent of the state budget, but the System must bear 38.6 percent of the cut. Georgia Tech's share of the cut will be \$8 million, bringing Tech's cumulative loss in state funding to \$51 million, or a 27.3 percent reduction over five years.

State funding, which represented a third of Georgia Tech's budget ten years ago, now comprises only a quarter. That decline may continue. The governor has indicated that in the future, the University System may not receive full funding of the enrollment-driven formula set in state law to determine System funding levels.

State funding is focused on student instruction

The primary purpose of the funding Tech receives from the state is to subsidize the cost of tuition, allowing Tech to offer low tuition rates to its in-state students. Nearly 90 percent of the funds Tech receives from the state are designated for student instruction. Of this latest \$8 million cut which Georgia Tech must now address, \$7.3 million is a reduction in funds for education in the classrooms and labs.

Budget continued, page 2

Campus Recreation Center celebrates with a grand opening



Campus Recreation Director Mike Edwards (left) emceed last week's dedication of the newly renovated Campus Recreation Center, a three-year, \$44 million makeover that gives Tech both a first-rate exercise facility and a site for hosting national athletic competitions in swimming and diving.



Carey Brown (right), chair of the Georgia Tech Alumni Association, speaks with Helen Crawford, wife of retired Tech professor and former University System Chancellor Vernon Crawford, in whose honor the leisure pool is named.



In addition to views of the downtown skyline, the elevated jogging track is part of an overall expansion that tripled the facility's workout space.



2004 State of the Institute Address

President Wayne Clough will deliver the annual State of the Institute Address to faculty and staff on Oct. 14 at 3 p.m. in room 236 of the Global Learning and Conference Center at Technology Square.

President Bush taps Clough for science policy post

National Science Board members oversee the NSF and advise Congress

Sean Selman
Institute Communications and Public Affairs

President George W. Bush has nominated President Wayne Clough to serve as a member of the National Science Board.

The 24-member board is a highly influential policy body established by Congress in 1950 to oversee the National Science Foundation (NSF) and provide advice to the president and Congress on critical issues related to science and engineering. The independent board usually meets six times a year.

President Bush's nomination of Clough was announced Sept. 23. The U.S. Senate and NSF Director Arden Bement Jr. must still approve the nomination.

If appointed, Clough will be the second Georgia Tech president to serve on the board. The first was the late Joseph Pettit, who was on the board from 1976 until 1982.

National Science Board members

are selected on the basis of their distinguished service in science and engineering research and education. They also are chosen because of their roles as scientific, engineering and educational leaders throughout the nation.

In 2001, President Bush appointed Clough to the President's Council of Advisors on Science and Technology (PCAST). If his latest nomination is approved, Clough will be the only individual to serve on both PCAST and the National Science Board. He currently chairs PCAST's Nanotechnology Task Force, and he previously chaired its Federal Research and Development panel.

Among his other national posts, Clough is a member of the executive committee of the U.S. Council on Competitiveness, where he co-chairs the National Innovation Initiative. He also chairs The Engineer of 2020 Project for the National Academy of Engineering.

The chief task of the National Science Board is to oversee the NSF as it carries out its critical statutory responsibility: to maintain the health of the nation's science and engineering enterprise by funding research in the basic sciences and engineering.

The NSF also supports innovative education programs from kindergarten through graduate school, preparing future generations of scientists and engineers and contributing to a more scientifically literate workforce and society.

The National Science Board establishes NSF policies, identifies issues critical to the NSF's future, approves the NSF's strategic budget directions, approves annual budget submissions to the U.S. Office of Management and Budget, and approves new programs and major awards.

In advising the president and Congress on science policy, members of the National Science Board also initiate and conduct studies on a broad range of policy topics related to science and engineering research and education. The board then presents its results and makes important recommendations to the president, Congress and the general public.

If his appointment earns approval, Clough will be the second Georgia Tech connection among the National Science Board's current membership. He will join fellow engineer John White Jr., who was on the faculty at Tech for 22 years but today is chancellor of the University of Arkansas.

QUOTE

"[John Kerry] sees things in a more complex way [than George W. Bush.] He must try to put it aside for an hour and be as blunt and direct as possible."

—John Endicott, professor in the School of International Affairs, handicapping the first presidential debate, held last week at the University of Miami.
(Cox News Service)

"It's something like Midtown and what they're trying to do with the Midtown Blueprint ... but Midtown is a much smaller scale."

—College of Architecture graduate student Christopher Hauck, who is working on a team of urban planners from Georgia Tech to help manage sprawl in Guayaquil, Ecuador.
(Atlanta Journal-Constitution)

Georgia Tech

THE WHISTLE

Editor: Michael Hagearty

Published by Institute Communications and Public Affairs.

Publication is weekly throughout the academic year and biweekly throughout the summer.

Archived issues of *The Whistle* can be accessed electronically through the Georgia Tech Web page, or directly at www.whistle.gatech.edu.

Calendar submissions e-mailed to editor@icpa.gatech.edu, or faxed to 404-894-7214 must be sent at least 10 days prior to desired publication date. Classified submissions are on a first come, first serve basis. For more information, call 404-894-8324.

Institute Communications and Public Affairs
Wardlaw Center
177 North Avenue
Atlanta, Georgia 30332-0181

Georgia Tech is a unit of the University System of Georgia.

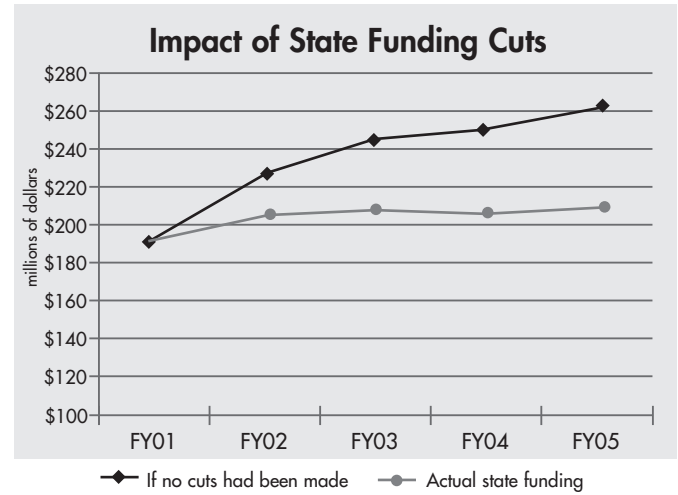
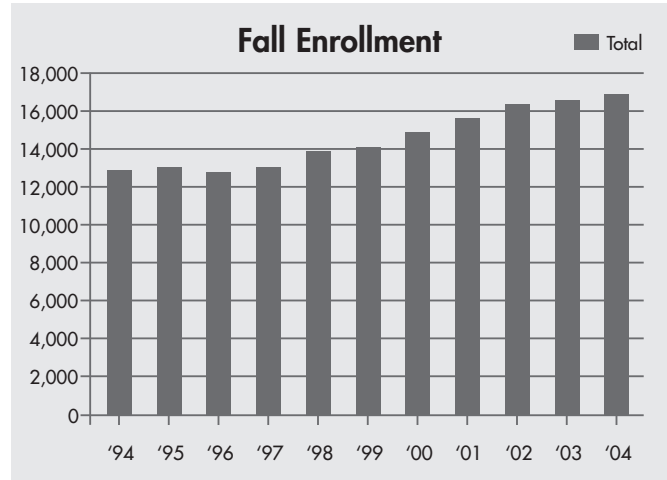
Budget, cont'd from page 1

It is very difficult for Georgia Tech to offset these cuts by transferring funds from other sources, because most of its other revenues are already earmarked for other purposes. About 40 percent of the Institute's budget is for research, which is funded through grants and contracts from federal government agencies and industry. The funding organizations stipulate how this money can be used and conduct follow-up audits. Another major source of revenue is auxiliary services such as student housing, dining services, and parking. However, these charges are designed to cover the cost of the services, and do not

The University System currently serves more than 247,000 students annually, and an additional 200,000 are expected to enroll by 2015. Currently, the System's percentage of the total state budget is 10.9 percent — the lowest share received by the University System since 1967.

produce additional income that can be transferred to other uses. Construction is also a major financial activity, and Tech typically undertakes a new construction project every year to address the needs of the growing student body and upgrade older facilities. However,

funding for construction is not linked to tuition or to the annual state appropriation for student instruction. State funding for construction comes in the form of special appropriations designated for particular buildings. Such appropriations have covered just 17 percent of the construction on the Tech campus over the past decade. Much of the remaining 83 percent has come from generous donors who have specified their gifts for this purpose. In other cases, loans support the construction of facilities that generate income. Parking decks, for example, have mortgages that are paid from the parking fees they generate over the course of their lives. The new Campus Recreation Center was partially funded with gifts from alumni and friends of Georgia Tech, with the balance covered



Searching for a kinder, gentler chemotherapy

David Terraso
Institute Communications
and Public Affairs

Painful and damaging chemotherapy may one day be a thing of the past.

Researchers at Georgia Tech and Purdue University have developed nano-sized particles that can target and trick cancer cells into absorbing them. Once inside, the particles may soon be able to deliver a pharmaceutical payload, killing the tumor from within and avoiding the destruction of healthy cells responsible for much of the damage caused by traditional chemotherapy. The research is published in a recent edition of the *Journal of the American Chemical Society*.

"We've developed a class of particles called core/shell nanogels that we can functionalize with a specific kind of chemistry that allows them to target cancer cells," said Andrew Lyon, associate professor in the School of Chemistry and Biochemistry.

That specific kind of chemistry is folic acid. Cancer cells have more receptors for folic acid and absorb more of the nutrient than do healthy cells. In a process akin to hiding a dog's heartworm pill in a glob of peanut butter, researchers covered the surface of the nanogels with folic acid, disguising the particles as an essential nutrient. Once the cancer cells took the particles in, researchers increased the temperature of the cells, causing the particles to clump together and shrink, killing the cell.

Heating the cell is a crucial step in triggering the particles to destroy cells, but it's also a

safeguard. Cancer cells have more folic acid receptors than normal cells, but normal cells could still absorb the nanoparticles. By applying a targeted heat source — such as ultrasound — to the tumor, doctors should be able to avoid killing healthy cells that happen to take in the nanoparticles.

"The possibility for using these nanoparticles as vehicles to target and kill only cancer cells is particularly exciting," said Jean Chmielewski, professor of chemistry at Purdue University. "Decorating the exterior of the vehicle with folic acid is a very direct route to enter cancer cells. This type of an approach will bring cancer chemotherapy to a new level of treatment."

Traditional chemotherapy, by contrast, can be described as a shotgun approach with the cellular poisons affecting tumors and healthy cells alike. Nausea, vomiting, hair loss, anxiety and a reduction in red blood cells are just some of the side effects that can occur with chemotherapy.

"If there's a way to specifically target medicine to the site of disease," Lyon said, "that makes this potential treatment all the more effective because then presumably you could use smaller doses and avoid the collateral damage that occurs during traditional chemotherapy."

Now that they've gotten cancer cells to take in the nanoparticles, the next step is to see how they behave with a toxic payload. "In the lab right now we're loading particles with anticancer agents and understanding the fundamentals of how the particles can encapsulate them, how tightly they can hold onto them and how closely we can regulate the uptake and release," said Lyon.

IN BRIEF:

Packaging Research Center celebrates its 10th anniversary

Last month, the Packaging Research Center gathered with its industry, government and university partners at the Georgia Tech Hotel and Conference Center to celebrate its 10-year anniversary as a National Science Foundation (NSF) Engineering Research Center (ERC).

The day was spent discussing the local, national and international impact of the PRC's educational and research programs, with a review of a decade of innovations and contributions in its major research areas, and a look forward to the vision for the next decade.

Lynn Preston, deputy division director for the NSF, reflected on the challenge her organization faced 20 years ago — to change the academic culture in engineering from its highly theoretical and scientific emphasis to one that would be more interdisciplinary, systemic and reflective of industry thinking and needs. She cited the leadership of PRC Director Rao Tummala in influencing this culture change, where cross-disciplinary teams of faculty and students have worked in collaboration with industry to transform research, education and technology.

Charles L. Liotta, vice provost for Research and dean of Graduate Studies, said, "The trajectory of where Georgia Tech is going has been significantly influenced by the PRC."

More information about the Center is at www.prc.gatech.edu.

a loan that will be paid with user fees from students, faculty, staff and alumni.

Finding ways to offset the cuts

To offset a portion of the most recent cut from the Governor, the Board of Regents of the University System of Georgia is proposing a 10 percent increase in tuition for the second semester of the 2004-05 year. Absorbing the full amount of the cut through tuition would require an increase of 27 percent.

Georgia Tech has already responded to earlier state funding cuts by streamlining its administration to achieve new levels of efficiency. For example, paper invoices for student accounts have been replaced by an award-winning Web-based system, reducing expenses for supplies by 50 percent and

Shortchanging funding for the University System of Georgia puts a damper on one of the state's most effective economic development tools. A 2001 study estimates the economic impact of the System at \$8 billion per year, with Georgia Tech alone making an impact of \$768 million.

postage by more than 60 percent. The Institute also laid off 70 staff and is holding another 185 vacant positions open in response to earlier cuts.

Absorbing the remainder of this most recent budget cut will probably result in laying off additional personnel and holding

even more vacant positions open. This is an unfortunate option, because education is a labor-intensive business. Studies prove time and again that a low student-to-faculty ratio is essential for a quality learning experience. Thus, the Institute's layoffs will focus on staff rather than teaching faculty, so that the direct impact on educational programs will be minimized.

A continuing commitment to excellence

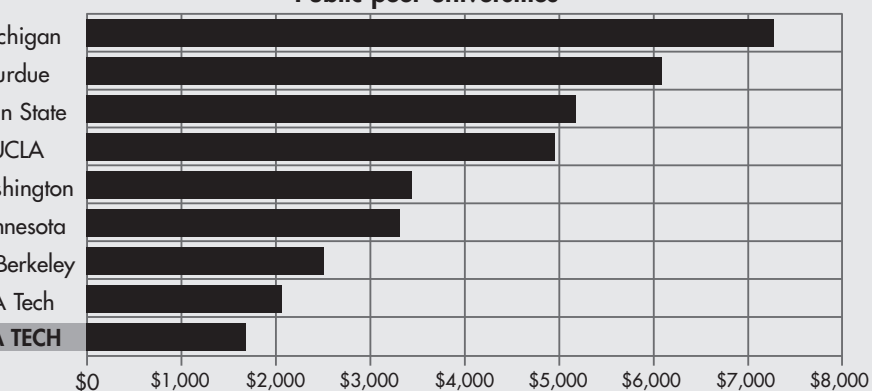
Georgia Tech's experience is not unique. The financial landscape for higher education is changing nationwide. Most states are cutting funding for public higher education, and several are shifting state funds away from allocations to public institutions and into need-based financial aid for residents.

Even in the face of declining state funding, Georgia Tech remains steadfast in its commitment to excellence. Tech is ranked among the nation's top ten public universities and will continue to pursue its goal of defining the technological university of the 21st century. Above all, Georgia Tech will continue to work hard to maintain and improve on the quality of the educational experience offered to its students.

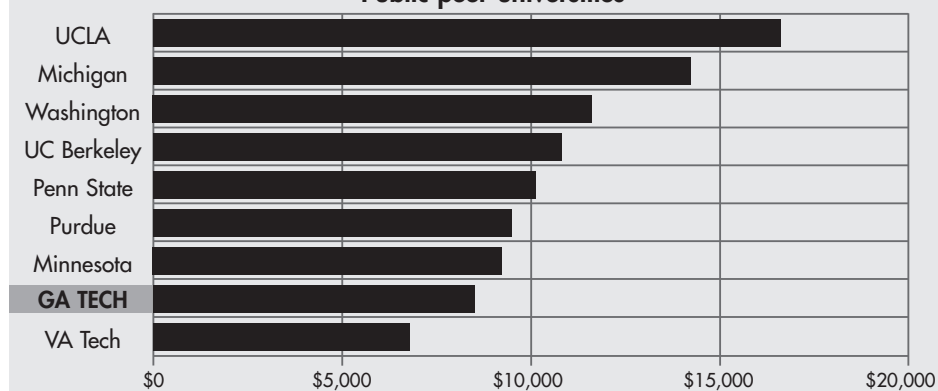
For more information...

University System of Georgia
www.usg.edu

In-state tuition per semester
Public peer universities



Out-of-state tuition per semester
Public peer universities



C A M P U S E V E N T S

Arts & Culture

Oct. 17

The Ferst Center for the Arts welcomes the dance company Pilobolus for a 5 p.m. performance. For tickets, visit www.ferstcenter.org.

Oct. 21

The School of Literature, Communication and Culture hosts the third annual Bourne Poetry Reading, hosted by Thomas Lux and featuring Mary Karr, Kurtis Lamkin and Gerald Stern, at 7 p.m. in the LeCraw Auditorium. No tickets are required. For more information, visit www.iac.gatech.edu/poetry.html.

Brown Bags/Conferences/Lectures

Oct. 7

The Georgia Tech Information Security Center's Distinguished Lecture Series welcomes Steve Kent, vice president and chief scientist in information security at BBN Technologies, on "Rethinking PKI: What's Trust Got to Do With It?" at 3 p.m. in the Technology Square Research Building.

Oct. 8

The School of Earth and Atmospheric Sciences hosts a seminar on "El Niño Southern Oscillation Modeling and Predicting," by University of Colorado Associate Professor Andrew Moore, at 3 p.m. in room L1205, ES&T Building.

Oct. 12

The School of Materials Science and Engineering's

Fall Seminar Series welcomes Mike Bevan, assistant professor of chemical engineering at Texas A&M University, on "Measurement and Manipulation of Interactions, Dynamics and Structure in Interfacial Colloidal Systems," at 3 p.m. in room 183, Love Building. For more information, e-mail valeria.milam@mse.gatech.edu.

Oct. 13

The College of Management's IMPACT Speaker Series welcomes Rich and Jeff Sloan of StartUp Nation, at 4:30 p.m. in the LeCraw Auditorium.

Oct. 15

A Cognitive Science Colloquium featuring Vanderbilt University Professor Rogers Hall on "Studies of Disrupting Representational Infrastructure: Toward a Theory of Distributing Cognition," will be at 2 p.m. in the MaRC Auditorium. For more information, visit www.cc.gatech.edu/cogsci.

Faculty/Staff Development

Oct. 12

The Office of Sponsored Programs hosts a class on "Philanthropy and Proposal Writing," from 2 - 4 p.m. in room 119 of CRB. To register, call 894-6944.

Oct. 13

Did you know that the Library provides access to 30,000 electronic books and 12,000 electronic journals? A brown bag class in "Using the Electronic Journals Available on Your Desktop" will be held at 11:30 a.m. in the Library's Homer

Rice Center. To register, visit www.trainsweb.gatech.edu/mastcal.asp.

Oct. 15

The Office of Organizational Development hosts a brown bag on "SkillPort eLearning Demo." This demo will show more about a learning resource that is available free to Georgia Tech faculty, staff and students, at 11:30 a.m. in room 203, Savant Building. For more information, visit www.trainsweb.gatech.edu/mastcal.asp.

Oct. 19

The College of Management hosts the second annual Springboard Growth Capital Workshop for Women. For more information, visit www.mgt.gatech.edu.

Miscellaneous

Oct. 4

Georgia Tech Coming Out Week (GTCOW) holds a kick off fair from 10 a.m. - 2 p.m. along the Skiles Walkway. For more information, visit www.gtcow.gatech.edu.

Oct. 14

The fall meeting of the General Faculty and General Faculty Assembly combined with meeting of the Academic Senate, at 3 p.m. in room 236, Global Learning and Conference Center. The main agenda item will be the State of the Institute Address. For more information, visit www.facultysenate.gatech.edu.

C L A S S I F I E D S

APPLIANCES

Kenmore washer and dryer. Two years old, very good condition. Will deliver. \$350 for both. Call 678-458-4339 or e-mail steve.swan@gtri.gatech.edu.

AUTOMOBILES

1982 Volkswagen Rabbit convertible. New top, battery, alternator and windshield. Excellent condition, 100K miles. A true classic and a fun little car. All records, \$1,500. E-mail dhoff86@att.net.

1991 Mitsubishi Eclipse. 2-door, 5-speed, new clutch, new tires, power windows, cruise, good condition. \$2,000. Call Johnny, 404-688-2123.

1996 Ford Taurus, 130K miles, automatic, a/c, CD player, a few dents and scratches but runs great. \$1,800. Call 894-6885 or e-mail david.bush@che.gatech.edu.

1997 Honda Accord EX. Automatic, 4-cyl. V-TEC, 4-door, champagne, alloy wheels, 6-disc CD changer. Excellent condition, dealer maintenance, one owner. 107K miles, \$7,000. E-mail boaz.chiu@gtri.gatech.edu.

1999 Mitsubishi Galant. Silver, V6, good condition. \$7,800. E-mail rita@cc.gatech.edu.

COMPUTERS

iMac G3, Mac OS 10.3 and 9.1, cobalt blue and white, pro mouse, keyboard, 350MHz, 256K RAM, 20G HD, excellent condition, runs flawlessly, \$450. Call 894-1027 or e-mail kac@chmsr.gatech.edu.

FURNITURE

Crib with mattress. Very solid construction, functional design, good condition. \$100. See www.prism.gatech.edu/~hk28/crib.jpg. E-mail hk28@mail.gatech.edu or call 404-876-8005.

Sofa/loveseat recliners, \$500; white oak washed tall armoire, \$475. All like new. Contact for pictures. E-mail kathy.cheek@ece.gatech.edu or call 770-975-3794.

Black metal full-size futon frame with mattress, \$100. Call Deborah, 404-627-8773.

Excellent office desk and credenza set in natural oak veneer, \$600; bookshelf and bookcase in simulated oak finish, \$50 each. E-mail mperdue@eas.gatech.edu or call 404-846-8878.

Oval, wooden dining room table with leaf section and 4 chairs, \$65. Ceiling fan, \$20. Will send digital photos. E-mail david.carico@dev.gatech.edu.

REAL ESTATE/ROOMMATES

3BR/2.5BA Buckhead townhome for rent. Includes washer, dryer, partial utilities, pool, patio, \$1,600/month. Call 770-668-9308.

2BR/2BA condo for sale or lease on Lenox Rd. Guarded gate, assigned underground parking, W/D, granite counters, pool. Reduced \$25K to sell. Best value in the building at \$195,000. Call 404-931-9922.

2BR/1BA house. Bonus room, hwd floors, screened porch, w/d, dishwasher, a/c, workshop w/fireplace, patio, large yard, privacy fence. Minutes to GT, lawn care

included. Pets negotiable. \$1,050/mo. Call 404-314-8632.

Roommate wanted to share Buckhead townhome. Furnished BR, private BA, walk-in closet, private phone, garage. 3 blocks from MARTA. \$900/mo. (includes utilities). Short-term leases considered. Call 404-229-1154 or e-mail pilotviv@bellsouth.net.

Spacious 1BR/1BA condo in Tucker, 15 minutes from Tech. Large family room, walk-in closet, garden tub and W/D hook-up. Pool, fitness center and laundry facility. \$690/month. Call Stefany, 404-312-6620.

2BR/2BA house in East Atlanta. Huge rooms, high ceilings, 4 fireplaces, hardwood floors, front porch and rear patio. Complete renovation: new kitchen, roof, HVAC, plumbing, exterior paint. \$239,900. Call 404-964-3964.

1BR/1BA condo for rent. Skyline views, across street from the Fox Theatre. Concierge and secured assigned parking space. Available Oct.1, deposit and references required. Call Joel, 404-229-1804.

Reduced 3BR/2BA home in Lithia Springs. 25 minutes to Tech. Motivated seller. 2-car garage, full basement, private back yard and screened porch. Pictures available, MLS #957175. \$219,000. Call Glenda, 404-843-2500.

1BR carriage house apt. available October 15. Three miles from campus in beautiful neighborhood. Rent: \$550 per month, one-year lease preferred. E-mail william.long@inta.gatech.edu.

MISCELLANEOUS

Free yellow jacket wasp nest removal. Nests to be used in research at Georgia Tech. Call 385-6311 or e-mail michael.goodisman@biology.gatech.edu.

Panasonic portable DVD player DVD-LS5. Brand new, \$250. Call 894-3871 or e-mail maryanne.salter@gtcc.gatech.edu.

White vinyl post and rail fencing. Tri-rail, 4.5 feet high once installed. 104 linear feet (14 posts, 14 caps and 40 8-foot rails). Near perfect condition, \$200. E-mail drew.mobley@gtcc.gatech.edu or call 385-0449.

Blue and tiger striped pit bull puppies, \$250. 12 weeks, wormed, shots current. Call Mike at 404-784-5707.

Five-carat diamond bracelet, yellow gold, appraised for \$4,800, selling \$2,000. Raised cluster diamond ring, 1.5-carat, yellow gold, size 6, worn twice, \$200. Call 894-0886.

Almost new SuperYard XT weatherproof play area for small children or puppies, \$60 OBO. E-mail harbertj@bellsouth.net or call Ann at 404-219-1115.

5-piece drumset, black, great starter set, needs new snare drum head. Asking \$200 OBO. E-mail Daniel at dhoff86@att.net.

Due to the volume of submissions, it may take several weeks for ads to appear in print.